

FIELD MANUAL

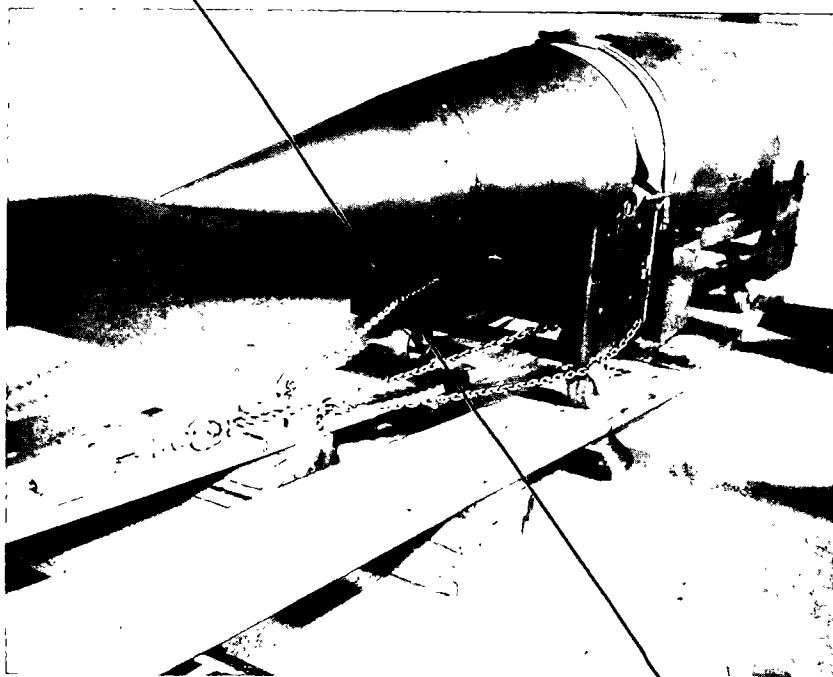
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*Commander's Info
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AIR TRANSPORT PROCEDURES

TRANSPORT OF HONEST JOHN WARHEAD SECTION

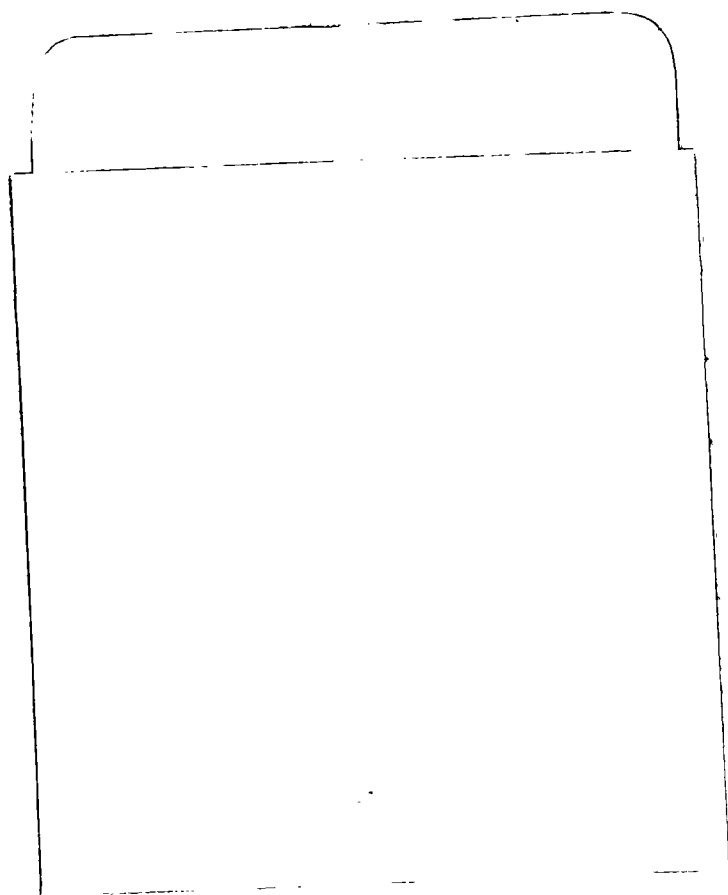
BY US ARMY HELICOPTERS



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Headquarters
Department of the Army
Washington, DC
13 November 1984

Immediate Action INTERIM CHANGE

FM 55-200
Interim Change
No. I01
Expires 13 November 1986

Air Transport Procedures

Transport of Honest John Warhead Section By US Army Helicopters

Justification. This interim change provides procedures for the application of tiedown straps used to secure nuclear weapons and components on board US Army helicopters. This guidance is safety-related and is required to prevent the inadvertent loosening of the tiedown straps during flight.

Expiration. This interim change expires 2 years from date of publication and will be destroyed at that time unless sooner rescinded or superseded by a permanent change.

1. FM 55-200, 15 April 1980, is changes as follows:

Page 2-2. Paragraph 2-2g is superseded as follows:

g. When attaching tiedown straps to cargo and to tiedown fittings, tension each tiedown strap to form at least one and one-half turns on the take-up spool of the tensioning ratchet. The one and one-half turns must be taken after webbing to webbing contact. Continue to tighten each tiedown, applying approximately equal tension throughout the tiedown arrangement to prevent movement of the cargo. Check tiedown during flight and tighten as necessary.

2. Post this change per DA Pam 310-13.

3. File this interim change in front of the publication.

(MTT-TRC)

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By Order of the Secretary of the Army:

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Distribution:

Active Army, ARNG, USAR: To be distributed in accordance with DA Form 12-31, Operator's Maintenance requirements for CH-47B/C; CH-47D; CH-54A; CH-54B; UH-1D/H/V/EH-1H and UH-60A; DA Form 12-34B requirements for TM 55 Series: Transportability Guidance, Air Transport Procedures: Nuclear Warheads and Projectiles and DA Form 12-35, Operator's Maintenance requirements for Section III Weapons System, Honest John.

FIELD MANUAL

No. 55-200

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 15 April 1980

AIR TRANSPORT PROCEDURES TRANSPORT OF HONEST JOHN WARHEAD SECTION BY US ARMY HELICOPTERS

	Paragraph	Page
CHAPTER 1. INTRODUCTION		
Purpose and Scope	1-1	1-1
Reporting of Publication Improvements	1-2	1-1
Definitions	1-3	1-1
2. GENERAL SAFETY AND SECURITY MATTERS		
Warnings	2-1	2-1
Operational Precautions	2-2	2-1
3. AIR TRANSPORTABILITY AND HANDLING DATA		
General	3-1	3-1
Time Required	3-2	3-2
4. INTERNAL TRANSPORT BY HELICOPTER		
Materials and Procedures for Transport of One M480 Container (Configuration I) by CH-47 Helicopter ...	4-1	4-1
Materials and Procedures for Transport of Two M480 Containers (Configuration I) by CH-47 Helicopter ..	4-2	4-2
Materials and Procedures for Transport of One or Two M480 Container Bases (Configuration II) by CH-47 Helicopter	4-3	4-4
Materials and Procedures for Transport of One Caster-Mounted Dolly (Configuration III) by CH-47 Helicopter	4-4	4-4
Materials and Procedures for Transport of Two Caster-Mounted Dollies (Configuration III) by CH-47 Helicopter	4-5	4-6
Materials and Procedures for Transport of One M480 Container (Configuration I) by CH-54 Helicopter Universal Military Pod	4-6	4-8
Materials and Procedures for Transport of Two M480 Containers (Configuration I) by CH-54 Helicopter Universal Military Pod	4-7	4-10
Materials and Procedures for Transport of One or Two M480 Container Bases (Configuration II) by CH-54 Helicopter Universal Military Pod	4-8	4-12
Materials and Procedures for Transport of One Caster-Mounted Dolly (Configuration III) by CH-54 Helicopter Universal Military Pod	4-9	4-12
Materials and Procedures for Transport of Two Caster-Mounted Dollies (Configuration III) by CH-54 Helicopter Universal Military Pod	4-10	4-14
Alternate Procedures for Transport of One or Two HONEST JOHN Warhead Sections by CH-54 Helicopter Universal Military Pod	4-11	4-15
5. EXTERNAL TRANSPORT BY HELICOPTER (Emergency Procedure)		
General	5-1	5-1
Materials and Procedures for Transport of M480 Container (Configuration I) Using Nylon and Chain, Four-Leg Sling	5-2	5-1
Materials and Procedures for Transport of M480 Container (Configuration I) Using Sling, Helicopter, Cargo Carrying External, Four-Leg	5-3	5-2

	Paragraph	Page
Materials and Procedures for Transport of M480 Container Base (Configuration II) Using Nylon and Chain, Four-Leg Sling	5-4	5-2
Materials and Procedures for Transport of M480 Container Base (Configuration II) Using Sling, Helicopter, Cargo Carrying External, Four-Leg	5-5	5-3
Materials and Procedures for Transport of Caster-Mounted Dolly (Configuration III) Using Nylon and Chain, Four-Leg Sling	5-6	5-3
Materials and Procedures for Transport of Caster-Mounted Dolly (Configuration III) Using Sling, Helicopter, Cargo Carrying External, Four-Leg	5-7	5-4
CHAPTER 6. EMERGENCY TRANSPORT BY HELICOPTER		
General	6-1	6-1
Emergency Movement of the HONEST JOHN Warhead Section as Helicopter Internal Loads	6-2	6-1
Emergency Movement of the HONEST JOHN Warhead Section as Helicopter External Loads	6-3	6-1
APPENDIX REFERENCES		A-1

(Front cover) *HONEST JOHN Warhead Section on Caster-Mounted Dolly Positioned for Loading into CH-47 Helicopter. Chain Bridle is Attached to Helicopter Winch Cable Hook.*

CHAPTER 1

INTRODUCTION

1-1. Purpose and Scope

a. This manual presents Department of the Army approved procedures for internal and external transport of the HONEST JOHN warhead section by US Army helicopters. Materials and qualified personnel needed to prepare, load, tie down, and unload, or to rig and derig the several transport configurations of the warhead section are prescribed here. Responsibilities of the consignor, consignee, and unit providing transportation are shown in chapter 4, AR 50-5. References are shown in the appendix.

b. The internal transport procedures in this manual apply when the warhead section is transported by the CH-47 helicopter or by universal military pod attached to the CH-54 helicopter. The described internal load of two warhead sections for the CH-47 and the CH-54 pod is a maximum load. The external transport procedures apply when one warhead section is transported by a UH-1-series helicopter having an allowable cargo load capacity equal to or greater than the weight of the load, or when one warhead section is transported by CH-47, CH-54, or UH-60A helicopter. Internal cargo may also include personnel and/or different types of nuclear weapons, depending on load capacity of the helicopter, restrictions of AR 50-5 or FM 100-50, and pertinent safety regulations (app).

c. Times given to prepare, load, tie down, and unload, or to rig and derig, the loads described in this manual may vary, depending upon existing conditions and the training of personnel involved.

1-2. Reporting of Publication Improvements

Users of this publication are encouraged to recommend changes and give comments for its improvement. Comments should be prepared on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded to Director, Military Traffic Management Command Transportation Engineering Agency, ATTN: MTT-TRC, PO Box 6276, Newport News, VA 23606 (electrically transmitted messages should be addressed to: DIRMTMCTEA FT EUSTIS VA//MTT-TRC//).

1-3. Definitions

a. *Warning.* Instructions that, if not followed, could result in injury to or death of personnel.

b. *Caution.* Instructions that, if not strictly observed, could result in damage to or destruction of equipment.

c. *Note.* A brief statement for use, as necessary, to emphasize a particular operating procedure, condition, and so forth.



CHAPTER 2

GENERAL SAFETY AND SECURITY MATTERS

WARNING

During a logistical movement of nuclear weapons by US Army aircraft, jettisoning is not authorized. During emergency movements (external transport by helicopter, chapters 5 and 6), the in-flight emergency procedures prescribed by the appropriate aircraft operator's manual will apply (para 4-3i and 4-3l, AR 50-5).

2-1. Warnings

The following warnings will be observed by personnel performing operations, procedures, and practices that are included or implied in this manual. Disregard for these warnings could result in personal injury or loss of life.

a. Before each nuclear cargo mission, the helicopter commander will become familiar with AR 50-5, AR 50-5-1, AR 95-27, and FM 100-50 and insure compliance therewith. Also, the commander will become familiar with the security, safety, and technical peculiarities of the cargo that may affect air transport. Flight plans will include provisions for avoiding built-up and heavily populated areas. When transporting the warhead section in the universal military pod by CH-54 helicopter, the pod must be secured to the helicopter to prevent jettisoning the pod deliberately or inadvertently. Procedures for securing the pod to prevent jettisoning are prescribed in TM 55-1520-217-10/1 and TM 55-1520-217-10/2.

b. To determine compatibility of any other nuclear weapons or other cargo for transport with the warhead section, as authorized by chapter 4, AR 50-5; chapter 1, AR 55-203; and FM 100-50, ordnance support must be consulted. Information on compatibility is shown in TM 39-45-51C and TM 38-250, which are distributed to major headquarters and to direct support and general support levels. Limits listed in TM 39-20-7 will not be exceeded when other types of nuclear weapons are transported along with the warhead section.

c. Emergency destruction procedures for the warhead section are shown in TM 39-50-8. Normally, emergency-destruct materials will not be carried on the same helicopter as nuclear weapons; however, the operational commander may

authorize joint transport of these materials (including blasting caps). Such materials will be in packagings authorized for transportation, isolated from weapons as far as possible, and tied down to prevent movement. Only the number of destruct charges and blasting caps necessary to destroy the warhead section will be carried aboard. Blasting caps in their container (recommend use of M2- and M19-series ammunition boxes) will be tied down separately and surrounded by a restrained sandbag barrier. Transport of electric blasting caps in helicopters is governed by paragraph C-26, TM 9-1300-206.

d. The warhead section will be loaded and tied down in accordance with the procedures described in this manual except that it may be repositioned for helicopter operational reasons, or for loading other nuclear weapons or other cargo and/or personnel. If a location other than that shown in the applicable tiedown diagram is used, the helicopter commander must insure that:

(1) The number and load capacity of the tiedown devices are as prescribed in this manual.

(2) Tiedown devices restraining the warhead section are secured to tiedown fittings in the same location relative to the item as those fittings used in the pertinent tiedown diagram. Required restraint will be provided when the depicted tiedown pattern is maintained.

(3) The requirements prescribed by TM 39-20-7 and TM 39-45-51A are fulfilled.

2-2. Operational Precautions

The following operational precautions apply during loading, rigging, tie down, transport, and unloading of the warhead section.

a. Web strap tiedown assemblies, used to secure the items described in this manual, are limited to a maximum time of usage (useful life) of 36 months. The time of usage will start at the time the tiedowns are unpackaged for use by the using organization. At that time, the straps will be marked, using stencil ink TT-I-1795 (any contrasting color), with the unpackaged date (month and year) in at least 1/2-inch-high letters, near the hook end of the strap. After 36 months, the

tiedown will be marked with a 2-inch-wide band on both sides of the strap, near the previously marked data, using yellow number 33538 stencil ink TT-I-1795 or enamel TT-E-516.

b. Before each use, tiedowns and cargo slings will be inspected for burns, tears, punctures, or cuts. Also, their metal components will be inspected for improper operation, corrosion, cracks, or distortion. If any of these conditions are found, the tiedowns or slings must be replaced. No strength testing of tiedowns or slings will be made. Other storage, inspection, and maintenance criteria for tiedowns and slings are found in 55-450-series technical manuals (app).

c. After 36 months use, serviceable web strap tiedown assemblies may be used to transport nuclear weapon trainers and training devices and other cargo (para 4-3h, AR 50-5). However, when the helicopter or pod is transporting the warhead section or other nuclear weapon or component, all tiedowns, to include those used to secure weapon trainers, training devices, and other cargo, must meet the 36-month-useful-life criterion.

d. Movement of the warhead section must be controlled to prevent injury to personnel or damage to the item, helicopter, or pod. During winching of the warhead section, a safety restraining device (web strapping or equivalent) will be used. Attach strapping to the item and pass the free end through a strap fastener (NSN 1670-00-360-0340 or equivalent), which is attached to a tiedown fitting in the forward part of the helicopter or pod. The free end of the strapping is then *manned outside, to the rear, and to one side of the helicopter or pod*. As the item is winched, remove slack from the strapping so that the container will be restrained if the winch or cable fails. Safety restraining devices identified in paragraph 4-67, TM 55-450-15, may be used.

e. During winching operations, the area behind the item must be cleared of personnel, and only necessary personnel will be in the cargo com-

partment. Personnel must not step across taut winch cable.

f. To prevent abrasion of webbing, pad and tape tiedown assemblies, safety restraining devices, and slings where they touch the item.

g. When attaching tiedown devices to cargo and to tiedown fittings, about equal tension must be kept throughout tiedown arrangements. Tighten the tiedowns, to prevent movement of cargo, and secure loose ends of straps. Tiedowns must be checked during flight and tightened as necessary.

h. To prevent movement of parking shoring during loading operations, secure a tiedown chain across cargo compartment forward of cargo tiedown location and butt shoring against chain.

i. Security and safety measures relative to guards, fire, or emergency destruction procedures, as established by pertinent publications (app.), apply during all phases of air transport. All operations described here will be in strict compliance with AR 50-5, AR 50-5-1, AR 50-104, TM 9-1300-206, TM 9-1100-200-10, TM 9-1100-200-20, and FM 100-50.

j. Passenger seats must be available for the minimum essential security personnel (courier officer and guard) during either internal or external transport of the warhead section.

k. The high noise level of helicopter engines and helicopter auxiliary power unit can cause permanent damage to hearing. All personnel working in the vicinity will wear hearing protectors and avoid entering engine noise danger area. Also, external cargo hookup personnel will wear goggles and protective headgear (hard hat, steel helmet, or flight helmet), and will use static electricity discharge probe, NSN 1670-00-574-8044, or a locally made probe.

l. Helicopters and universal military pod will be searched and inspected for unauthorized personnel and equipment and for possible sabotage. Entry controls will be set up by the courier officer to maintain security integrity until completion of the nuclear mission.

CHAPTER 3

AIR TRANSPORTABILITY AND HANDLING DATA

3-1. General

a. The HONEST JOHN warhead section will normally be air-transported as an internal load (chap 4). However, under emergency conditions, it can also be transported as an external load (chap 5). External transport will be approved by the commander authorizing the emergency movement.

b. Air transport load configurations of the HONEST JOHN warhead section are as follows:

(1) Configuration I, the warhead section in

the M480 (XM136E2) or XM480E1 (XM136E1) shipping and storage container.

(2) Configuration II, the warhead section on the M480 (XM136E2) or XM480E1 (XM136E1) shipping and storage container base assembly, with or without casters.

(3) Configuration III, the warhead section on the caster-mounted dolly.

c. The dimensions and approximate weight of configurations I through III are as follows:

<i>Configuration</i>	<i>Length</i>	<i>Width</i>	<i>Height</i>	<i>Weight*</i>
I (M480)	134.5 in. (3.42 m)	40.0 in. (1.02 m)	52.0 in. (1.32 m)	2,663 lb (1,208 kg)
I (XM480E1)	134.5 in. (3.42 m)	44.0 in. (1.12 m)	52.0 in. (1.32 m)	2,775 lb (1,259 kg)
II (M480)	134.5 in. (3.42 m)	40.0 in. (1.02 m)	44.5 in.** (1.13 m)	2,223 lb (1,008 kg)
II (XM480E1)	134.5 in. (3.42 m)	44.0 in. (1.12 m)	44.5 in.** (1.13 m)	2,315 lb (1,050 kg)
III (dolly)	121.2 in. (3.10 m)	37.0 in. (0.94 m)	43.0 in. (1.09 m)	1,670 lb (758 kg)

*Approximate weight of empty containers: 1,425 pounds (646 kg) for the M480 and 1,517 pounds (688 kg) for the XM480E1.

**Height without casters mounted on bottom. Height with casters mounted on bottom is 47.5 inches (1.21 m).

NOTE

Casters installed on base assembly of M480 and XM480E1 containers (with or without cover installed) will be removed prior to shipment or the container will be blocked to assure that weight is off casters during shipment. This manual provides for shipment of the containers and the container base assemblies without casters.

d. The caster-mounted dolly is a conversion of the shipping and storage container base frame and suspension frame assembly. Conversion procedures are shown in section 5, TM 9-1100-200-20.

e. Bolts and latches on containers and warhead section tiedown strap must be tightened, if necessary.

f. If wheeled or roller conveyor sections are not available, the containers and container bases on their skids may be winched over the shoring.

g. CGU-1/B tiedown devices may be placed

around forward end of container or container base and aft end of conveyors to prevent container or base from being pulled off conveyors during loading.

h. The warhead section may be faced either forward or aft for internal transport by helicopter. (Procedures and tiedown diagrams in this manual provide for facing the warhead section forward.)

i. Chapter 4 identifies the 2- by 12-inch lumber shoring needed for loading, transporting, and unloading each configuration. Plywood may be used as parking and rolling shoring in place of all or part of the lumber shoring, except blocking shoring. The plywood shoring must be at least 1/2-inch thick and 16-inches wide under each conveyor section and 2-inches thick and 12-inches wide under the caster-mounted dolly.

j. Plywood, 4- by 8-foot by 1/2-inch, may be used between container or container base and conveyors, but is not required.

k. Personnel dosimetry (film badge) or special

radiological handling procedures are not required, unless otherwise specified, for any personnel (including aircrew) engaged in operations described in this manual.

l. The helicopter center of balance must be computed for all loads, to include nuclear weapon security personnel (two-man concept).

3-2. Time Required

a. Four persons can prepare, load, and tie down each container, container base, or caster-mounted dolly in about 30 minutes.

b. Four persons can unload each item from the helicopter or pod in about 15 minutes.

NOTE

The strap, webbing, universal tiedown (NSN 5340-00-980-9277) may be used in place of the CGU-1/B tiedown device (NSN 1670-00-725-1437) or the MC-1 tiedown device. Each tiedown has a rated strength of 5,000 pounds.

CHAPTER 4

INTERNAL TRANSPORT BY HELICOPTER

NOTE

The following transport procedures for the HONEST JOHN warhead section in the M480 shipping and storage container apply also to the warhead section in the XM480E1 container. Tiedown and lifting fixtures on the M480 container are bars; however, in most cases, the fixtures on the XM480E1 container are rings.

4-1. Materials and Procedures for Transport of One M480 Container (Configuration I) by CH-47 Helicopter

a. Materials.

- (1) Parking shoring: two pieces, 2- by 12-inch by 12-foot.
- (2) Rolling shoring: two pieces, 2- by 12-inch by 12-foot; four pieces, 2- by 12-inch by 8-foot.
- (3) Bridge shoring: plywood, one sheet, 4- by 8-foot by 1/2-inch (may be used but is not required between container and conveyors).
- (4) Blocking shoring: approximately 22 pieces, 2- by 12- by 12-inch.
- (5) Wheeled or roller conveyor: two sections, 10-foot (NSN 3910-00-903-1303), or equivalent.
- (6) Truck, forklift or crane: one, load-tested, 6,000-pound-minimum-capacity.

b. Loading

(1) Place rolling shoring and two helicopter auxiliary loading ramps to align with skids of container. Use parking shoring as rolling shoring.

(2) Place shoring and conveyors, rollers down, as shown in figure 4-1. Use 8-foot pieces on ramp and as first extension into the cargo compartment. Place blocks between conveyors to maintain alignment.

(3) Place container (front end towards helicopter) on conveyors using forklift or crane.

(4) Attach helicopter winch cable hook to towing eye on front end of container base, then safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch.

(5) Place a wood block at ramp hinge, beneath towing cable, to protect helicopter floor.

(6) Position guides to adjust shoring, observe clearances, and signal winch operator as necessary.

(7) Winch the container onto helicopter ramp (fig 4-2), then reposition ground-level shoring into the helicopter. Use blocking shoring to fill in the gap between the rolling and parking shoring.

(8) Winch container over shoring to its tie-down location, then apply fore and aft restraints.

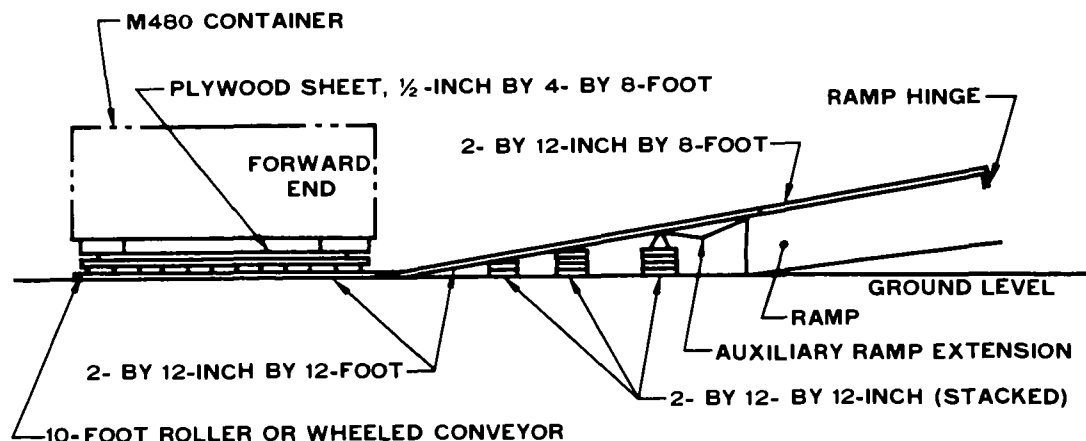


Figure 4-1. Side view schematic of rolling and blocking shoring positioned for loading the M480 container, with HONEST JOHN warhead section, into CH-47 helicopter. Plywood may be used between container and conveyors but is not required.

(9) Release tension on winch cable. The cable may remain attached to the container for use in unloading.

(10) Tie down the container (on the conveyors and shoring) in accordance with figure 4-3 and table 4-1.

(11) Reposition materials needed during unloading, then tie down as directed by the helicopter commander.

c. Unloading. Unloading procedures are essentially the reverse of loading procedures. Use the helicopter winch to restrain the container as it is pushed from the helicopter. Be careful when container passes over ramp hinge.

4-2. Materials and Procedures for Transport of Two M480 Containers (Configuration I) by CH-47 Helicopter

a. Materials.

(1) Parking shoring: four pieces, 2- by 12-inch by 12-foot.

(2) Rolling shoring: two pieces, 2- by 12-inch by 12-foot; two pieces, 2- by 12-inch by 8-foot.

(3) Bridge shoring: plywood, two sheets, 4- by 8-foot by 1/2-inch (may be used but is not required between container and conveyors).

(4) Blocking shoring: approximately 22 pieces, 2- by 12- by 12-inch.

(5) Wheeled or roller conveyor: four sections, 10-foot (NSN 3910-00-903-1303), or equivalent.

(6) Truck, forklift or crane: one, load-tested, 6,000-pound-minimum-capacity.

b. Loading.

(1) Place rolling shoring and two helicopter auxiliary loading ramps to align with skids of container. Use parking shoring as rolling shoring.

(2) Place shoring and conveyors, rollers down, as shown in figure 4-1. Use 8-foot pieces on ramp. Place blocks between conveyors to maintain alignment.

(3) Follow procedures in 4-1b(3) through 4-1b(6).

(4) Winch the first container onto helicopter ramp (fig 4-2), then reposition ground-level shoring into the helicopter. Use blocking shoring to fill in gap between the rolling and parking shoring.

(5) Winch the container over shoring to its tie-down location and apply fore-and-aft restraints.

(6) Remove winch cable for use on second container. Pass the cable beneath first container, and attach cable hook to towing eye on front end of second container.

(7) Temporarily relocate 12-foot parking shoring from helicopter to ground level, then load sec-

ond container as prescribed for first container. Place 12-foot shoring at container tie-down location, then winch container onto shoring.

(8) Release tension on winch cable. The cable may remain attached to the aft container for use in unloading.

NOTE

When aft one-man seats in the CH-47 helicopter are used, relocate tiedowns from fittings A19 and E19 (fig 4-4) to fittings B19 and D19, respectively.

(9) Tiedown containers (on the conveyors and shoring) in accordance with figure 4-4 and table 4-2.

NOTE

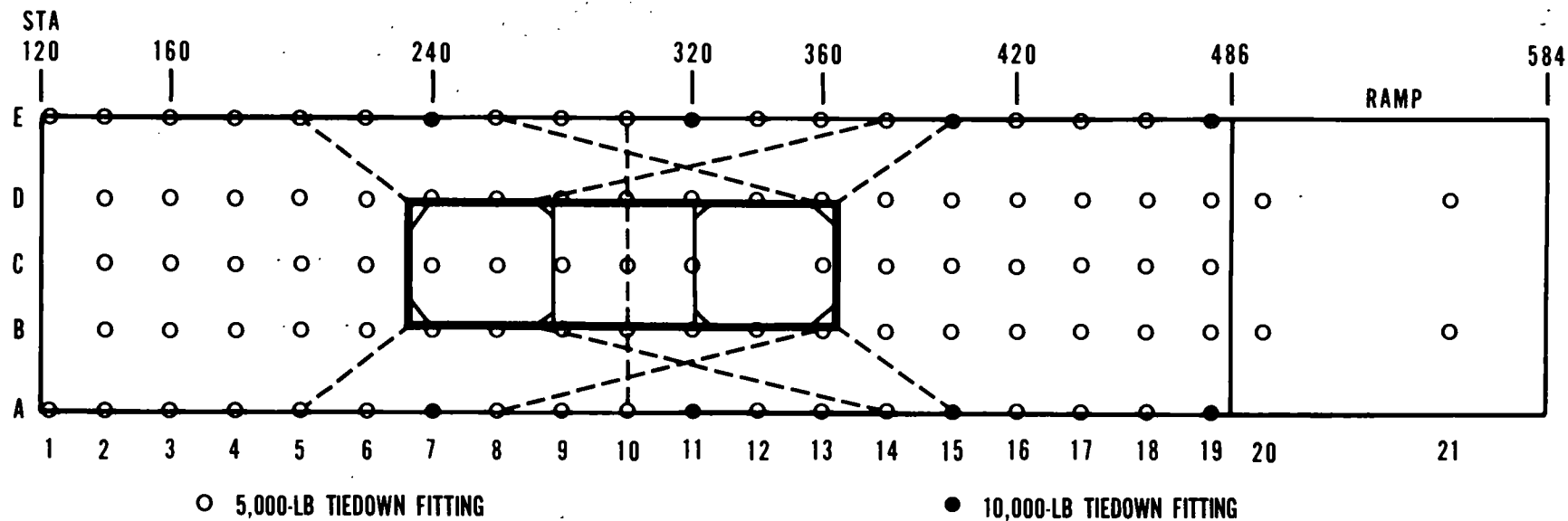
When tiedown fittings and area forward of helicopter station 160 are not available for cargo, move item A (fig 4-4) aft so that forward edge of container is at station 165. Also relocate tiedowns from fittings A1 and E1 to fittings A3 and E3 and from fittings A4 and E4 to fittings A5 and E5, respectively.

(10) Reposition materials needed during unloading, then tie down as directed by the helicopter commander.

c. Unloading. Unloading procedures are essentially the reverse of loading procedures. Use the



Figure 4-2. M480 container, with HONEST JOHN warhead section, being loaded into CH-47 helicopter. Note position of rolling and blocking shoring. Plywood may be used between container and conveyors but is not required.



NOTE: UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	230	309	2663

Figure 4-3. Tiedown diagram for one M480 container, with HONEST JOHN warhead section, in CH-47 helicopter.

Table 4-1.

Tiedown Data for One M480 Container, With HONEST JOHN Warhead Section, in CH-47 Helicopter

Tiedown fitting		Tiedown device*		Attach to item
design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A5	5	CGU-1/B	5	Around upper-left front-vertical frame
E5	5	CGU-1/B	5	Around upper-right front-vertical frame
A8	5	CGU-1/B	5	Left-rear lift fixture
E8	5	CGU-1/B	5	Right-rear lift fixture
A10/E10	5	CGU-1/B	5	Over the container
A14	5	CGU-1/B	5	Left-front lift fixture
E14	5	CGU-1/B	5	Right-front lift fixture
A15	10	CGU-1/B	5	Around upper-left rear-vertical frame
E15	10	CGU-1/B	5	Around upper-right rear-vertical frame

*MC-1 tiedown device may be used.

helicopter winch to restrain each container as it is pushed from the helicopter. Be careful when container passes over ramp hinge.

4-3. Materials and Procedures for Transport of One or Two M480 Container Bases (Configuration II) by CH-47 Helicopter

NOTE

The HONEST JOHN warhead section on the M480 or XM480E1 container base differs from the warhead section in the M480 or M480E1 shipping and storage container only in that the container cover is removed from the container base.

a. Materials. Items are shown in either 4-1a or 4-2a above.

b. Loading. Procedures are shown in either 4-1b or 4-2b above. The M480 container base and warhead section are shown in figure 4-5. Tie down the container bases (on the conveyors and shoring) in accordance with figure 4-6 and table 4-3 or figure 4-7 and table 4-4.

c. Unloading. Procedures are shown in either 4-1c or 4-2c above.

4-4. Materials and Procedures for Transport of One Caster-Mounted Dolly (Configuration III) by CH-47 Helicopter

a. Materials.

(1) Parking shoring: two pieces, 2- by 12-inch by 12-foot.

(2) Rolling shoring: two pieces, 2- by 12-inch by 12-foot; four pieces, 2- by 12-inch by 8-foot.

(3) Blocking shoring: approximately 22 pieces, 2- by 12- by 12-inch.

(4) Chains: two 10,000-pound capacity (type used with C-2 or MB-1 tiedown devices), or equivalent.

(5) Truck, forklift or crane: one, load tested, 6,000-pound-minimum-capacity.

b. Loading.

(1) Insure that warhead section tiedown strap is secured, and that caster wheels are serviceable and locked parallel to the longitudinal axis of the dolly.

(2) Place two helicopter auxiliary loading ramps to align with caster wheels.

(3) Place rolling shoring as shown in figure 4-8. Use 8-foot pieces on ramp and as first extension into cargo compartment. Use parking shoring as rolling shoring.

(4) Place caster-mounted dolly (with front end of warhead section towards helicopter ramp) on shoring, using forklift or crane.

(5) Form a bridle by passing two 10,000-pound-capacity chains around frame at front end of dolly. Attach helicopter winch cable hook to bridle, then safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch.

(6) Place a wood block at ramp hinge, beneath towing cable, to protect helicopter floor.

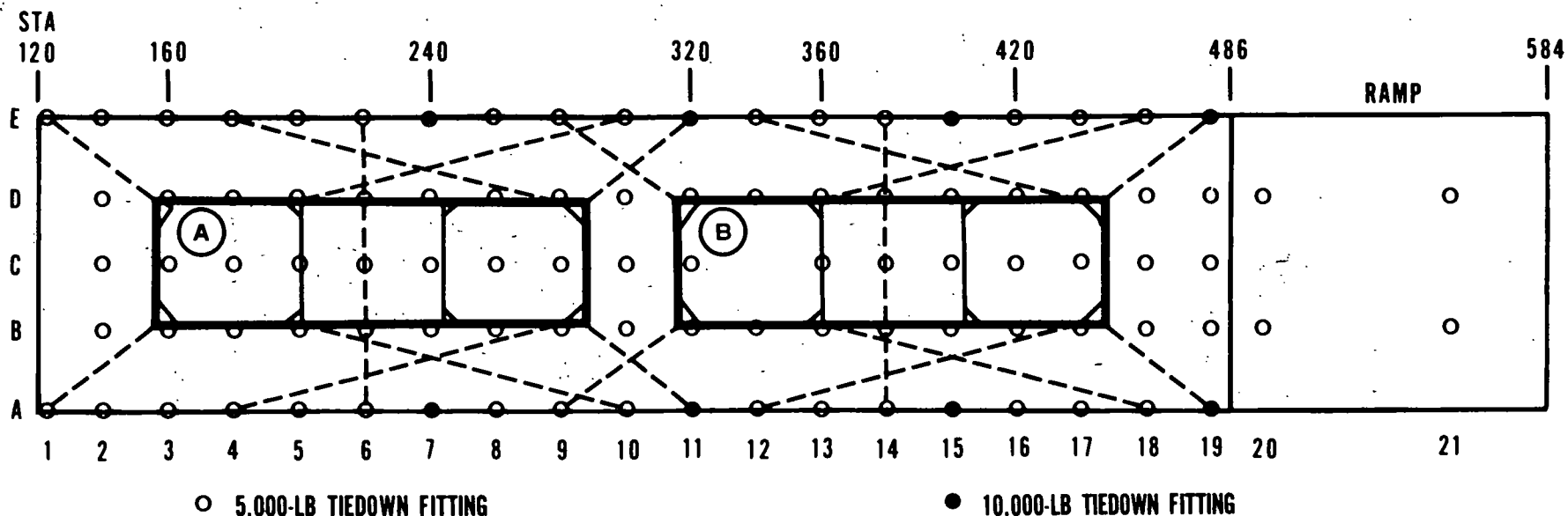
(7) Position guides to adjust shoring, to observe clearances, and to signal winch operator as necessary.

(8) Winch the dolly onto helicopter ramp and reposition ground-level shoring into the helicopter. Winch the dolly over shoring to its tiedown location, then apply fore-and-aft restraints.

(9) Release tension on winch cable. The cable may remain attached to the dolly for use in unloading.

(10) Turn two diagonally opposed caster wheels 90 degrees to the longitudinal axis of the dolly, then lock all four caster wheels to prevent movement.

(11) Tie down the dolly (on the shoring) in accordance with figure 4-9 and table 4-5.



NOTE: UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	155	234	2663
(B)	M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	315	394	2663

Figure 4-4: Tiedown diagram for two M480 containers, with HONEST JOHN warhead sections, in CH-47 helicopter.

Table 4-2.

Tiedown Data for Two M480 Containers, With HONEST JOHN Warhead Sections, in CH-47 Helicopter

Item	Tiedown fitting		Tiedown device*		Attach to item
	design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A	A1	5	CGU-1/B	5	Around upper-left front-vertical frame
	E1	5	CGU-1/B	5	Around upper-right front-vertical frame
	A4	5	CGU-1/B	5	Left-rear lift fixture
	E4	5	CGU-1/B	5	Right-rear lift fixture
	A6/E6	5	CGU-1/B	5	Over the container
	A10	5	CGU-1/B	5	Left-front lift fixture
	E10	5	CGU-1/B	5	Right-front lift fixture
	A11	10	CGU-1/B	5	Around upper-left rear-vertical frame
	E11	10	CGU-1/B	5	Around upper-right rear-vertical frame
B	A9	5	CGU-1/B	5	Around upper-left front-vertical frame
	E9	5	CGU-1/B	5	Around upper-right front-vertical frame
	A12	5	CGU-1/B	5	Left-rear lift fixture
	E12	5	CGU-1/B	5	Right-rear lift fixture
	A14/E14	5	CGU-1/B	5	Over the container
	A18	5	CGU-1/B	5	Left-front lift fixture
	E18	5	CGU-1/B	5	Right-front lift fixture
	A19	10	CGU-1/B	5	Around upper-left rear-vertical frame
	E19	10	CGU-1/B	5	Around upper-right rear-vertical frame

*MC-1 tiedown device may be used.

(12) Reposition materials needed during unloading, then tie down as directed by the helicopter commander.

c. Unloading. Unloading procedures are essentially the reverse of loading procedures. Use the helicopter winch to restrain the dolly as it is pushed from the helicopter. Be careful when dolly passes over ramp hinge.

4-5. Materials and Procedures for Transport of Two Caster-Mounted Dollies (Configuration III) by CH-47 Helicopter

a. Materials.

(1) Parking shoring: four pieces, 2- by 12-inch by 12-foot.

(2) Rolling shoring: two pieces, 2- by 12-inch by 12-foot; two pieces, 2- by 12-inch by 8-foot.

(3) Blocking shoring: approximately 22 pieces, 2- by 12- by 12-inch.

(4) Chains: two 10,000-pound-capacity (type used with C-2 or MB-1 tiedown devices), or equivalent.

(5) Truck, forklift or crane: one, load-tested, 6,000-pound-minimum-capacity.

b. Loading.

(1) Follow procedures in 4-4b(1) through 4-4b(7).

(2) Winch the first dolly onto helicopter ramp, then reposition ground-level shoring into the helicopter. Use blocking shoring to fill in gap between the rolling and parking shoring.

(3) Winch the dolly over shoring to its tiedown location, then apply fore-and-aft restraints.

(4) Remove winch cable for use on second dolly. Pass the cable beneath first dolly, then attach cable hook to bridle on second dolly.

(5) Temporarily relocate 12-foot parking shoring from helicopter to ground level, then load second dolly as prescribed for first dolly. Place 12-foot shoring at dolly tiedown location, then winch dolly onto shoring.

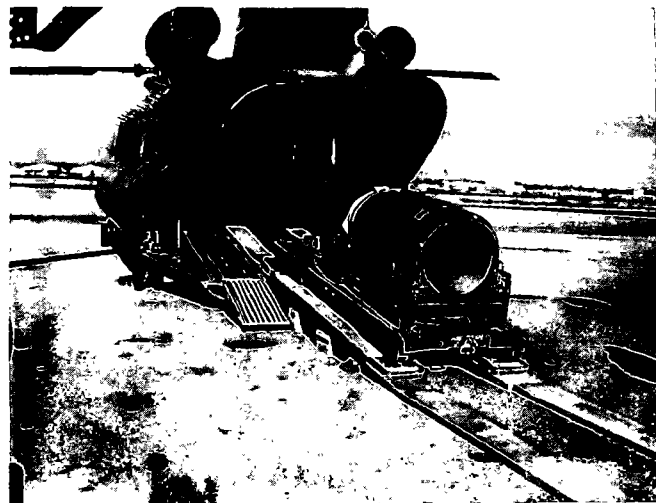
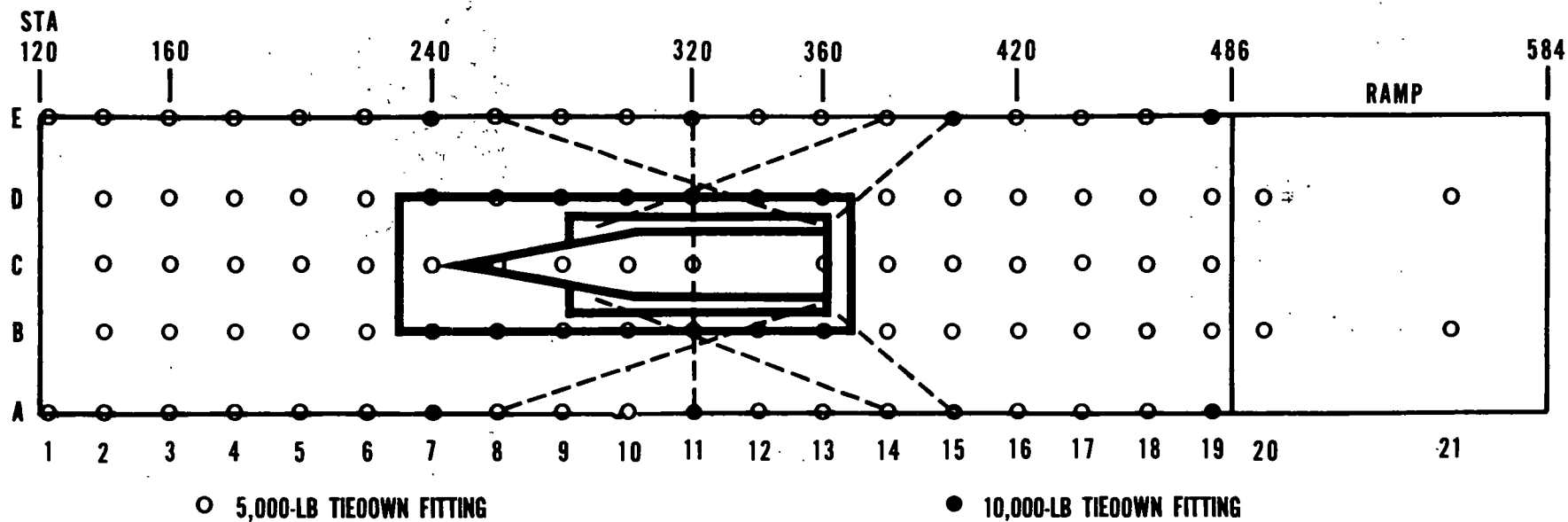


Figure 4-5. M480 container base, with HONEST JOHN warhead section, ready for loading into CH-47 helicopter. Plywood may be used between container and conveyors but is not required.



NOTE: UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	230	309	2223

Figure 4-6. Tiedown diagram for one M480 container base, with HONEST JOHN warhead section, in CH-47 helicopter.

Table 4-3.

Tiedown Data for One M480 Container Base, With HONEST JOHN Warhead Section, in CH-47 Helicopter

Tiedown fitting		Tiedown device*		Attach to item
design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A8	5	CGU-1/B	5	Left-rear frame-lift fixture
E8	5	CGU-1/B	5	Right-rear frame-lift fixture
A11/E11	10	CGU-1/B	5	Over dolly frame under warhead
A14	5	CGU-1/B	5	Left-front frame-lift fixture
E14	5	CGU-1/B	5	Right-front frame-lift fixture
A15	10	CGU-1/B	5	Left-rear base-lift fixture
E15	10	CGU-1/B	5	Right-rear base-lift fixture

*MC-1 tiedown device may be used.

(6) Release tension on winch cable. The cable may remain attached to the aft dolly for use in unloading.

(7) For each dolly, turn two diagonally opposed caster wheels 90 degrees to the longitudinal axis of the dolly, then lock all four caster wheels to prevent movement.

(8) Tie down the dollies (on the shoring) in accordance with figures 4-10 and table 4-6.

(9) Reposition materials needed during unloading, then tie down as directed by the helicopter commander.

c. Unloading. Unloading procedures are essentially the reverse of loading procedures. Use the helicopter winch to restrain each dolly as it is pushed from the helicopter. Be careful when dolly passes over ramp hinge.

WARNING

Insure that the universal military pod is secured to the CH-54 helicopter to prevent jettisoning the pod either deliberately or inadvertently (para 2-1a).

NOTE

Materials and procedures shown in paragraphs 4-6 through 4-10 apply when the CH-54 helicopter universal military pod is in flight configuration. See paragraph 4-11 for alternate procedures when CH-54 (pod) is not in flight configuration.

4-6. Materials and Procedures for Transport of One M480 Container (Configuration I) by CH-54 Helicopter Universal Military Pod

a. Materials.

(1) Parking shoring: two pieces, 2- by 12-inch by 12-foot.

(2) Rolling shoring: four pieces, 2- by 12-inch by 12 foot.

(3) Bridge shoring: plywood, one sheet, 4- by 8-foot by 1/2-inch (may be used between container and conveyors, but is not required).

(4) Blocking shoring: approximately 50 pieces, 2- by 12- by 12-inch.

(5) Wheeled or roller conveyor; two sections, 10-foot (NSN 3910-00-903-1303), or equivalent.

(6) Chains: two, 10,000-pound-capacity (type used with C-2 or MB-1 tiedown devices), or equivalent.

(7) Truck, forklift or crane: one, load-tested, 6,000-pound-minimum-capacity.

(8) Truck: wrecker, medium, 5-ton, 6×6 M543A2, with winch, or suitable substitute.

(9) Snatch block, tackle, single-sheave: two. (Snatch block (NSN 3940-00-239-0372), organic to the M543A2 wrecker, or equivalent block may be used.)

(10) Plywood: two pieces, 2- by 2-foot by 1/2-inch, or equivalent.

b. Loading.

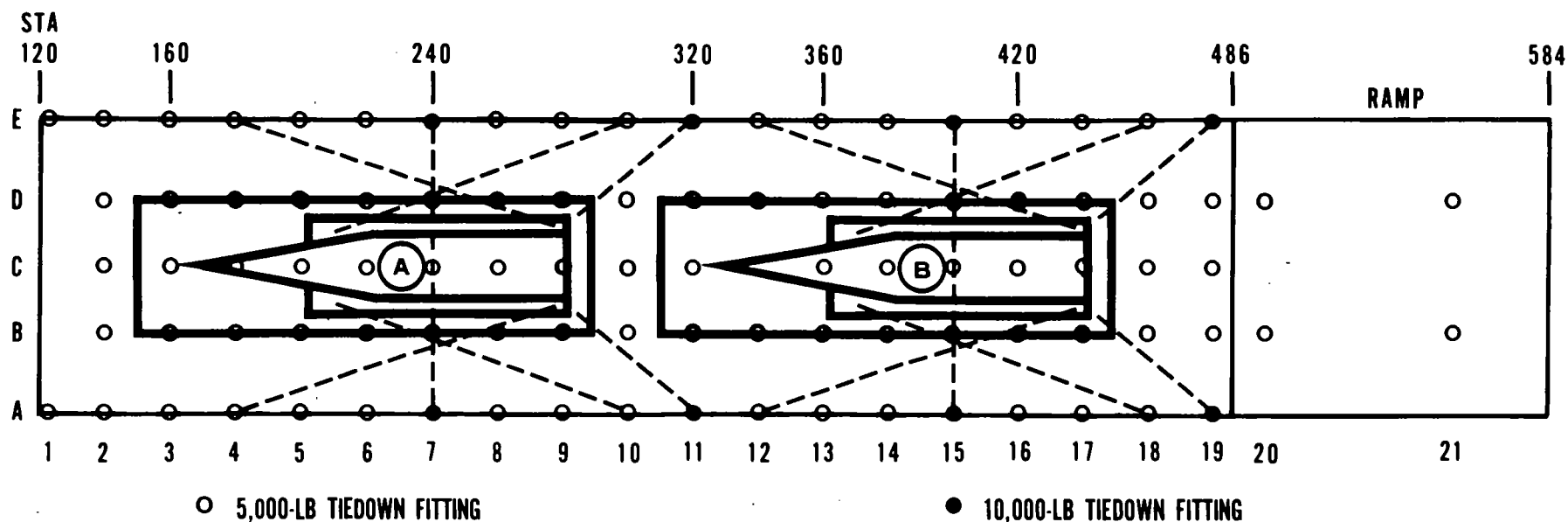
(1) Place shoring and conveyors, rollers down, as shown in figure 4-11. Use parking shoring as rolling shoring.

(2) Place container (front end towards pod) on conveyors using forklift or crane.

(3) Using tiedown chains, attach snatch blocks to pod tiedown fittings A1 and D1. Adjust chains to insure that container is winched down the center line of the pod. Place plywood pieces beneath blocks to protect floor. Winching diagram is shown in figure 4-12.

(4) Pass towing cable through open snatch blocks, then attach cable hook to towing eye on front end of container base. Safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch. Close and lock blocks.

(5) Place wood blocks at ramp hinge, beneath towing cable, to protect pod floor.



NOTE: UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 32D AND 36D

ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	150	229	2223
(B)	M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	310	389	2223

Figure 4-7. Tiedown diagram for two M480 container bases, with HONEST JOHN warhead sections, in CH-47 helicopter.

Table 4-4.

Tiedown Data for Two M480 Container Bases, With HONEST JOHN Warhead Sections, in CH-47 Helicopter

Item	Tiedown fitting		Tiedown device*		Attach to item
	design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A	A4	5	CGU-1/B	5	Left-rear frame-lift fixture
	E4	5	CGU-1/B	5	Right-rear frame-lift fixture
	A7/E7	10	CGU-1/B	5	Over dolly frame under warhead
	A10	5	CGU-1/B	5	Left-front frame-lift fixture
	E10	5	CGU-1/B	5	Right-front frame-lift fixture
	A11	10	CGU-1/B	5	Left-rear base-lift fixture
	E11	10	CGU-1/B	5	Right-rear base-lift fixture
B	A12	5	CGU-1/B	5	Left-rear frame-lift fixture
	E12	5	CGU-1/B	5	Right-rear frame-lift fixture
	A15/E15	10	CGU-1/B	5	Over dolly frame under warhead
	A18	5	CGU-1/B	5	Left-front frame-lift fixture
	E18	5	CGU-1/B	5	Right-front frame-lift fixture
	A19	10	CGU-1/B	5	Left-rear base-lift fixture
	E19	10	CGU-1/B	5	Right-rear base-lift fixture

*MC-1 tiedown device may be used.

(6) Position guides to adjust shoring, to observe clearances, and to signal truck-winch operator as necessary.

(7) Winch container into the pod by either taking up on the truck-winch or backing the truck with winch locked. Reposition ground-level shoring into the pod at container tiedown location.

(8) Winch the container over shoring to its tiedown location, then apply fore-and-aft restraints.

(9) Tie down the container (on the conveyors and shoring) in accordance with figure 4-13 and table 4-7. Remove towing cable and blocks.

(10) Reposition materials needed during unloading, then tie down as directed by the helicopter commander.



Figure 4-8. HONEST JOHN warhead section on caster-mounted dolly ready for loading in CH-47 helicopter. Note position of rolling and blocking shoring.

c. *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use the towing cable to restrain the container as it is pushed from the pod. Be careful when container passes over ramp hinge.

4-7. Materials and Procedures for Transport of Two M480 Containers (Configuration I) by CH-54 Helicopter Universal Military Pod.

a. *Materials.*

(1) Parking shoring: four pieces, 2- by 12-inch by 12-foot.

(2) Rolling shoring: two pieces, 2- by 12-inch by 12-foot.

(3) Bridge shoring: plywood, two sheets, 4- by 8-foot by 1/2-inch (may be used between container and conveyors, but is not required).

(4) Blocking shoring: approximately 50 pieces, 2- by 12- by 12-inch.

(5) Wheeled or roller conveyor: four sections, 10-foot (NSN 3910-00-903-1303), or equivalent.

(6) Items shown in 4-6a(6) through 4-6a(10).

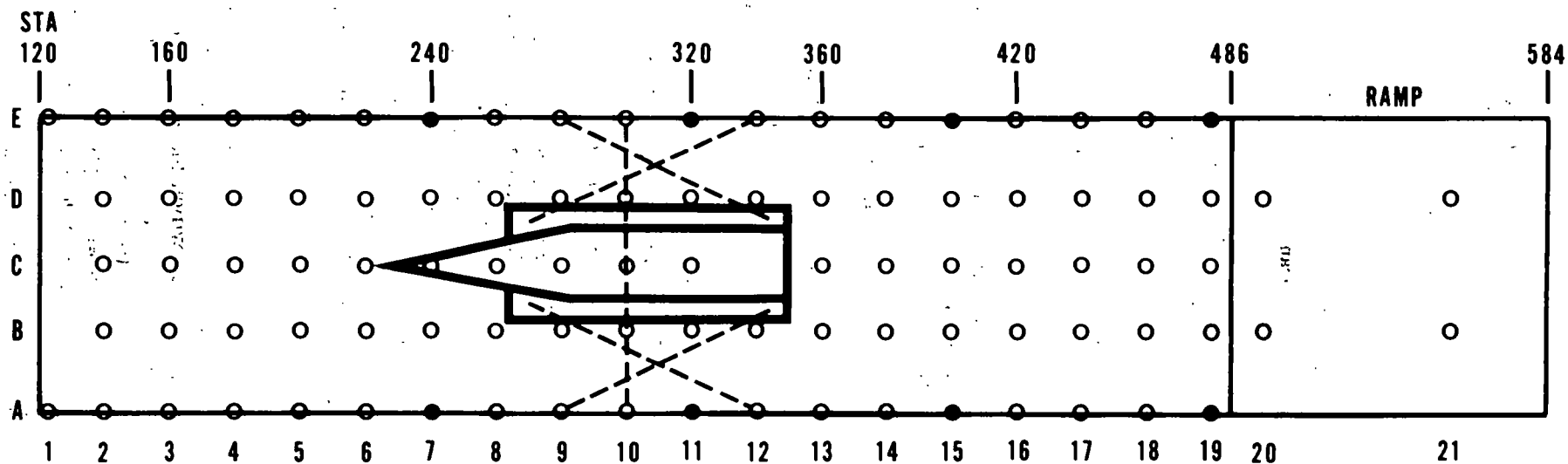
b. *Loading.*

(1) Follow procedures in 4-6b(1) through 4-6b(6).

(2) Winch the first container into the pod by either taking up on the truck winch or backing the truck with winch locked. Position shoring in the pod at container tiedown location.

(3) Winch the container over shoring to its tiedown location and apply fore-and-aft restraints. Remove towing cable and blocks for use on second container.

(4) Attach snatch blocks, using tiedown chains,



○ 5,000-LB TIEDOWN FITTING

● 10,000-LB TIEDOWN FITTING

NOTE: UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
CASTER-MOUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	264	300	1670

Figure 4-9. Tiedown diagram for one caster-mounted dolly, with HONEST JOHN warhead section, in CH-47 helicopter.

Table 4-5.

Tiedown Data for One Caster-Mounted Dolly, With HONEST JOHN Warhead Section, in CH-47 Helicopter

Tiedown fitting		Tiedown device*		Attach to item
design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A9	5	CGU-1/B	5	Left-rear frame-lift fixture
E9	5	CGU-1/B	5	Right-rear frame-lift fixture
A10/E10	5	CGU-1/B	5	Over dolly frame under warhead
A12	5	CGU-1/B	5	Left-front frame-lift fixture
E12	5	CGU-1/B	5	Right-front frame-lift fixture

*MC-1 tiedown device may be used.

to pod tiedown fittings A9 and D9, then attach cable hook to towing eye on front end of second container.

(5) Temporarily relocate 12-foot shoring from pod to ground level, then load second container as prescribed for first container. Place 12-foot shoring at container tiedown location, then winch container on to shoring.

(6) Tie down containers (on the conveyors and shoring) in accordance with figure 4-14 and table 4-8. Remove towing cable and blocks.

(7) Reposition materials needed during unloading, then tie down as directed by the helicopter commander.

c. Unloading. Unloading procedures are essentially the reverse of loading procedures. Use the towing cable to restrain each container as it is pushed from the pod. Be careful when container passes over ramp hinge.

4-8. Materials and Procedures for Transport of One or Two M480 Container Bases (Configuration II) by CH-54 Helicopter Universal Military Pod

NOTE

The Honest John warhead section on the M480 or XM480E1 container base differs from the warhead section in the M480 or M480E1 shipping and storage container only in that the container cover is removed from the container base.

a. Materials. Items are shown in either 4-6a or 4-7b above.

b. Loading. Procedures are shown in either 4-6b or 4-7b above. The M480 container base and warhead section are shown in figure 4-15. Tie down the container bases (on the conveyors and shoring) in accordance with figure 4-16 and table 4-9 or figure 4-17 and table 4-10.

c. Unloading. Procedures are shown in either 4-6c or 4-7c above.

4-9. Materials and Procedures for Transport of One Caster-Mounted Dolly (Configuration III) by CH-54 Helicopter Universal Military Pod

a. Materials.

(1) Parking shoring: two pieces, 2- by 12-inch by 12-foot.

(2) Rolling shoring: two pieces, 2- by 12-inch by 12-foot.

(3) Blocking shoring: approximately 50 pieces, 2- by 12- and 12-inch.

(4) Chains: two, 10,000-pound-capacity (type used with C-2 or MB-1 tiedown devices), or equivalent.

(5) Truck, forklift or crane: one load-tested, 6,000-pound-minimum-capacity.

(6) Truck: wrecker, medium, 5-ton, 6 × 6, M543A2, with winch, or suitable substitute.

(7) Snatch block, tackle, single sheave: two. (Snatch block (NSN 3940-00-239-0372), organic to the M543A2 wrecker, or equivalent block may be used.)

(8) Plywood: two pieces, 2- by 2-foot by 1/2-inch, or equivalent.

b. Loading.

(1) Insure that warhead section tiedown strap is secured, and that caster wheels are serviceable and locked parallel to the longitudinal axis of the dolly.

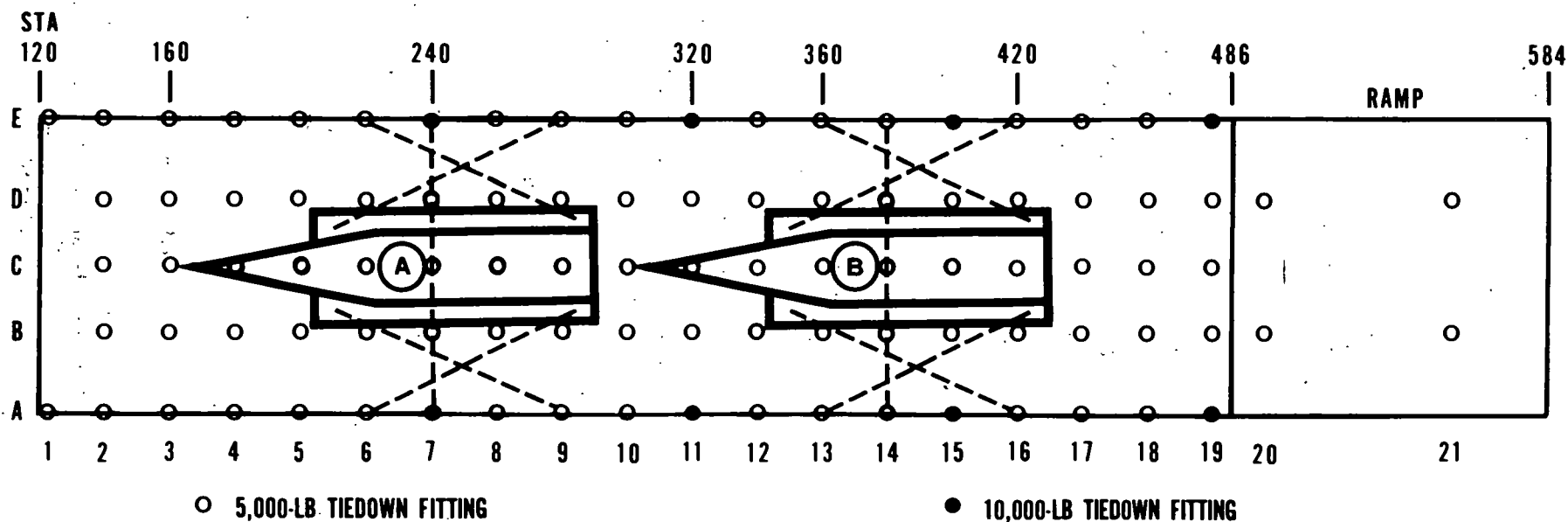
(2) Place shoring on ground, on ramp, and forward of ramp hinge. Use parking shoring as rolling shoring.

(3) Block ramp and ramp shoring as shown in figure 4-11.

(4) Place dolly (with front end of warhead section towards pod) on ground shoring, using forklift or crane.

(5) Form a bridle by passing two 10,000-pound-capacity chains around frame at front end of dolly.

(6) Attach snatch blocks, using tiedown chains,



NOTE: UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT. (LB)
			REFERENCE POINT	STATION		
(A)	CASTER-MOUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	204	240	1670
(B)	CASTER-MOUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	344	380	1670

Figure 4-10. Tiedown diagram for two caster-mounted dollies, with HONEST JOHN warhead sections, in CH-47 helicopter.

Table 4-6.

Tiedown Data for Two Caster-Mounted Dollies, With HONEST JOHN Warhead Sections, in CH-47 Helicopter

Item	Tiedown fitting		Tiedown device*		Attach to item
	design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A	A6	5	CGU-1/B	5	Left-rear frame-lift fixture
	E6	5	CGU-1/B	5	Right-rear frame-lift fixture
	A7/E7	10	CGU-1/B	5	Over dolly frame under warhead
	A9	5	CGU-1/B	5	Left-front frame-lift fixture
	E9	5	CGU-1/B	5	Right-front frame-lift fixture
B	A13	5	CGU-1/B	5	Left-rear frame-lift fixture
	E13	5	CGU-1/B	5	Right-rear frame-lift fixture
	A14/E14	5	CGU-1/B	5	Over dolly frame under warhead
	A16	5	CGU-1/B	5	Left-front frame-lift fixture
	E16	5	CGU-1/B	5	Right-front frame-lift fixture

*MC-1 tiedown device may be used.

to pod tiedown fittings A1 and D1. Adjust chains to insure that dolly is winched down the center line of the pod. Place plywood pieces beneath blocks to protect floor. Winching diagram is shown in figure 4-12.

(7) Pass towing cable through opened snatch blocks, then attach cable hook to bridle on dolly. Safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch. Close and lock blocks.

(8) Place wood blocks at ramp hinge, beneath towing cable, to protect pod floor.

(9) Position guides to adjust shoring, to observe clearances, and to signal truck-winch operator as necessary.



Figure 4-11. M480 container, with HONEST JOHN warhead section, positioned for loading into universal military pod. Note position of shoring. Plywood may be used between container and conveyor, but is not required.

(10) Winch the dolly into the pod by either taking up on the truck winch or backing the truck with winch locked. Reposition ground-level shoring into the pod at dolly tiedown location.

(11) Winch the dolly over shoring to its tiedown location, then apply fore-and-aft-restraints.

(12) Turn two diagonally opposed caster wheels 90 degrees to the longitudinal axis of the dolly, then lock all four caster wheels to prevent movement.

(13) Tie down the dolly (on the shoring) in accordance with figure 4-18 and table 4-11. Remove towing cable and blocks.

(14) Reposition materials needed during unloading, then tie down as directed by the helicopter commander.

c. Unloading. Unloading procedures are essentially the reverse of loading procedures. Use the towing cable to restrain the dolly as it is pushed from the pod. Be careful when dolly passes over ramp hinge.

4-10. Materials and Procedures for Transport of Two Caster-Mounted Dollies (Configuration III) by CH-54 Helicopter Universal Military Pod

a. Materials.

(1) Parking shoring: four pieces, 2- by 12-inch by 12-foot.

(2) Items shown in 4-9a(2) through 4-9a(8).

b. Loading.

(1) Follow procedures in 4-9b(1) through 4-9b(9).

(2) Winch the first dolly into the pod by either taking up on the truck-winch or backing the truck with winch locked. Reposition ground-level shoring into the pod at dolly tiedown location.

(3) Winch the dolly over shoring to its tiedown

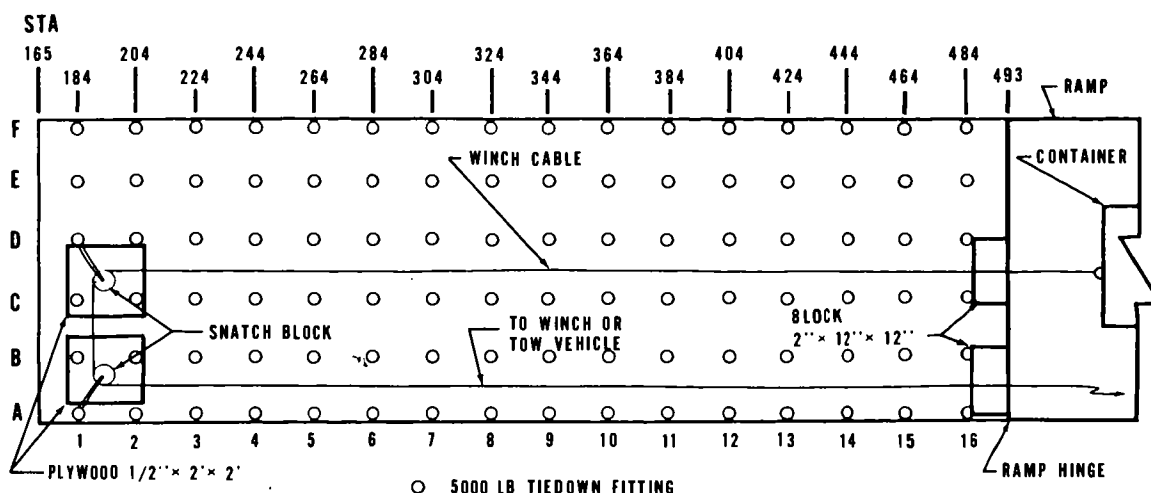


Figure 4-12. Winching diagram for loading *HONEST JOHN* warhead section containers into CH-54 helicopter universal military pod.

location, then apply fore-and-aft restraints. Remove towing cable and blocks for use on second dolly.

(4) Attach snatch blocks, using tiedown chains, to pod tiedown fitting A9 and D9, then attach cable hook to towing eye on front end of second dolly.

(5) Temporarily relocate 12-foot shoring from pod to ground level, then load second dolly as prescribed for first dolly. Place 12-foot shoring at dolly tiedown location, then winch dolly onto shoring.

(6) For each dolly, turn two diagonally opposed caster wheels 90 degrees to the longitudinal axis of the dolly, then lock all four caster wheels to prevent movement.

(7) Tie down the dollies (on the shoring) in accordance with figure 4-19 and table 4-12. Remove towing cable and blocks.

(8) Reposition materials needed during unloading, then tie down as directed by the helicopter commander.

c. Unloading. Unloading procedures are essentially the reverse of loading procedures. Use the towing cable to restrain each dolly as it is pushed from the pod. Be careful when dolly passes over ramp hinge.

4-11. Alternate Procedures for Transport of One or Two Honest John Warhead Sections by CH-54 Helicopter Universal Military Pod

NOTE

Paragraph 4-11 provides for transport of the warhead sections in configuration I, II, or III by universal military pod when in other than flight configuration.

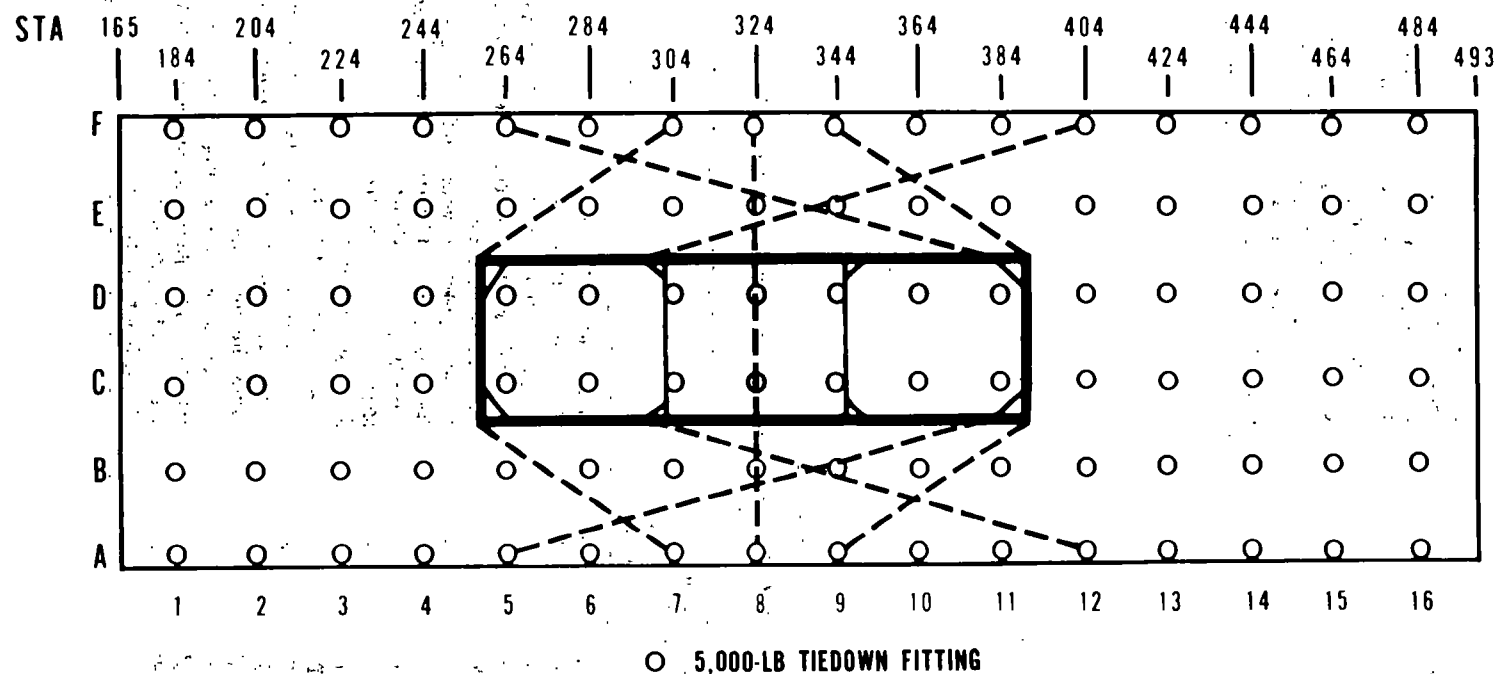
a. Materials. Items shown in 4-6 through 4-10 for respective configurations, except that less blocking shoring is needed.

b. Loading.

(1) Place helicopter in kneeled position (only CH-54A can be kneeled) or retract pod four-wheeled system and rest pod on ground. With helicopter kneeled or pod resting on ground, the pod floor is lowered and the ramp angle is reduced.

(2) Follow loading procedures in 4-6 through 4-10 for respective configurations of the warhead section.

c. Unloading. Unloading procedures are essentially the reverse of loading procedures in 4-6 through 4-10 for respective configurations of the warhead section.



DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	259	338	2663

Figure 4-13. Tiedown diagram for one M480 container, with HONEST JOHN warhead section, in CH-54 helicopter universal military pod.

Table 4-7.

Tiedown Data for One M480 Container, With HONEST JOHN Warhead Section, in CH-54 Helicopter Universal Military Pod

Tiedown fitting		Tiedown device*		Attach to item
design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A5	5	CGU-1/B	5	Left-rear lift fixture
F5	5	CGU-1/B	5	Right-rear lift fixture
A7	5	CGU-1/B	5	Around upper-left front-vertical frame
F7	5	CGU-1/B	5	Around upper-right front-vertical frame
A8/F8	5	CGU-1/B	5	Over the container
A9	5	CGU-1/B	5	Around upper-left rear-vertical frame
F9	5	CGU-1/B	5	Around upper-right rear-vertical frame
A12	5	CGU-1/B	5	Left-front lift fixture
F12	5	CGU-1/B	5	Right-front lift fixture

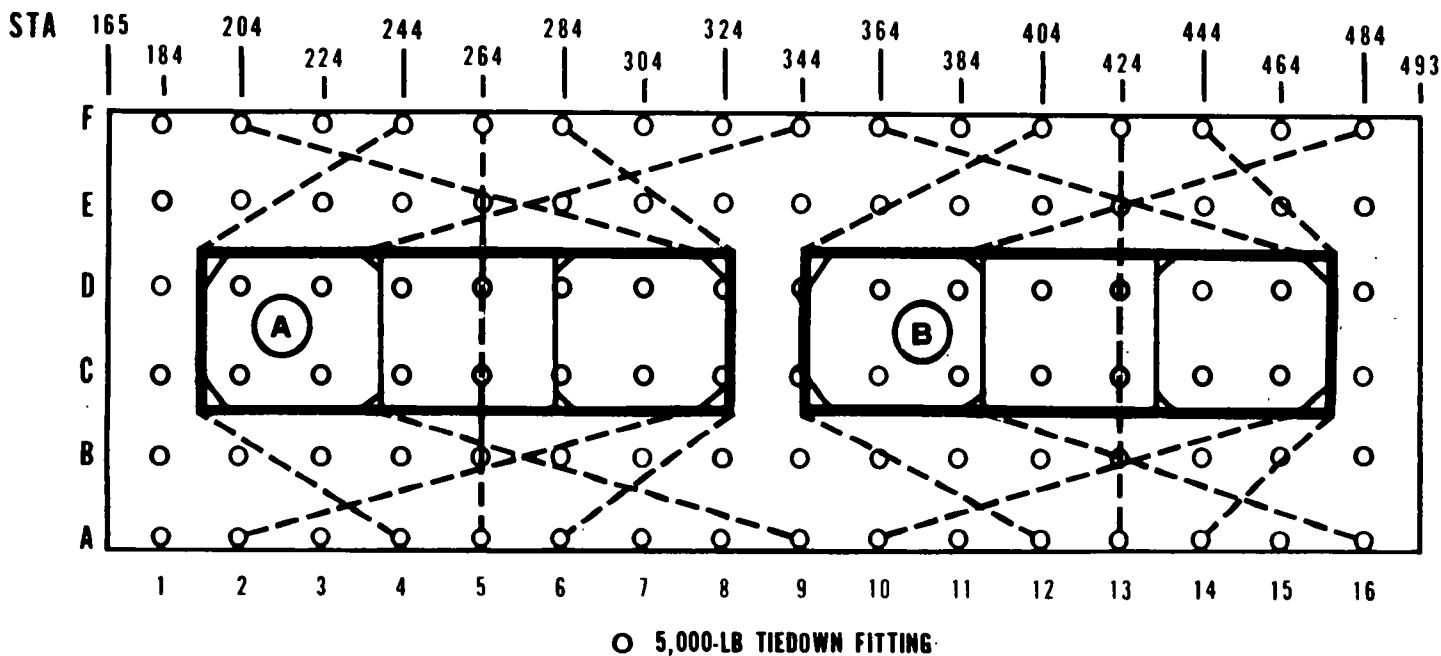
*MC-1 tiedown device may be used.

Table 4-8.

Tiedown Data for Two M480 Containers, With HONEST JOHN Warhead Sections, in CH-54 Helicopter Universal Military Pod

Item	Tiedown fitting		Tiedown device*		Attach to item
	design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A	A2	5	CGU-1/B	5	Left-rear lift fixture
	F2	5	CGU-1/B	5	Right-rear lift fixture
	A4	5	CGU-1/B	5	Around upper-left front-vertical frame
	F4	5	CGU-1/B	5	Around upper-right front-vertical frame
	A5/F5	5	CGU-1/B	5	Over the container
	A6	5	CGU-1/B	5	Around upper-left rear-vertical frame
	F6	5	CGU-1/B	5	Around upper-right rear-vertical frame
	A9	5	CGU-1/B	5	Left-front lift fixture
	F9	5	CGU-1/B	5	Right-front lift fixture
B	A10	5	CGU-1/B	5	Left-rear lift fixture
	F10	5	CGU-1/B	5	Right-rear lift fixture
	A12	5	CGU-1/B	5	Around upper-left front-vertical frame
	F12	5	CGU-1/B	5	Around upper-right front-vertical frame
	A13/F13	5	CGU-1/B	5	Over the container
	A14	5	CGU-1/B	5	Around upper-left rear-vertical frame
	F14	5	CGU-1/B	5	Around upper-right rear-vertical frame
	A16	5	CGU-1/B	5	Left-front lift fixture
	F16	5	CGU-1/B	5	Right-front lift fixture

*MC-1 tiedown device may be used.



ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	194	273	2663
(B)	M480 CONTAINER WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	344	423	2663

Figure 4-14. Tiedown diagram for two M480 containers, with HONEST JOHN warhead sections, in CH-54 helicopter universal military pod.



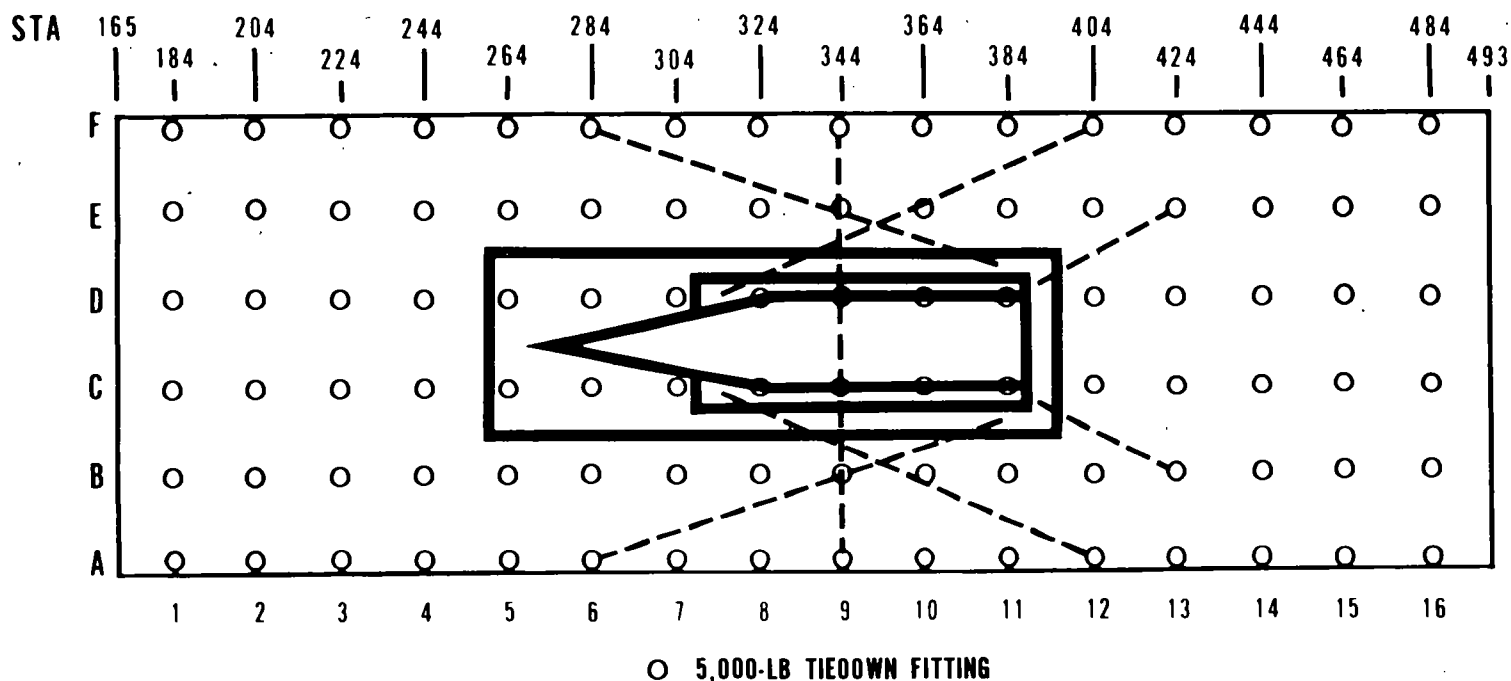
Figure 4-15. M480 container base, with HONEST JOHN warhead section, ready for loading into CH-54 helicopter universal military pod.

Table 4-9.

Tiedown Data for One M480 Container Base, With HONEST JOHN Warhead Section, in CH-54 Helicopter Universal Military Pod

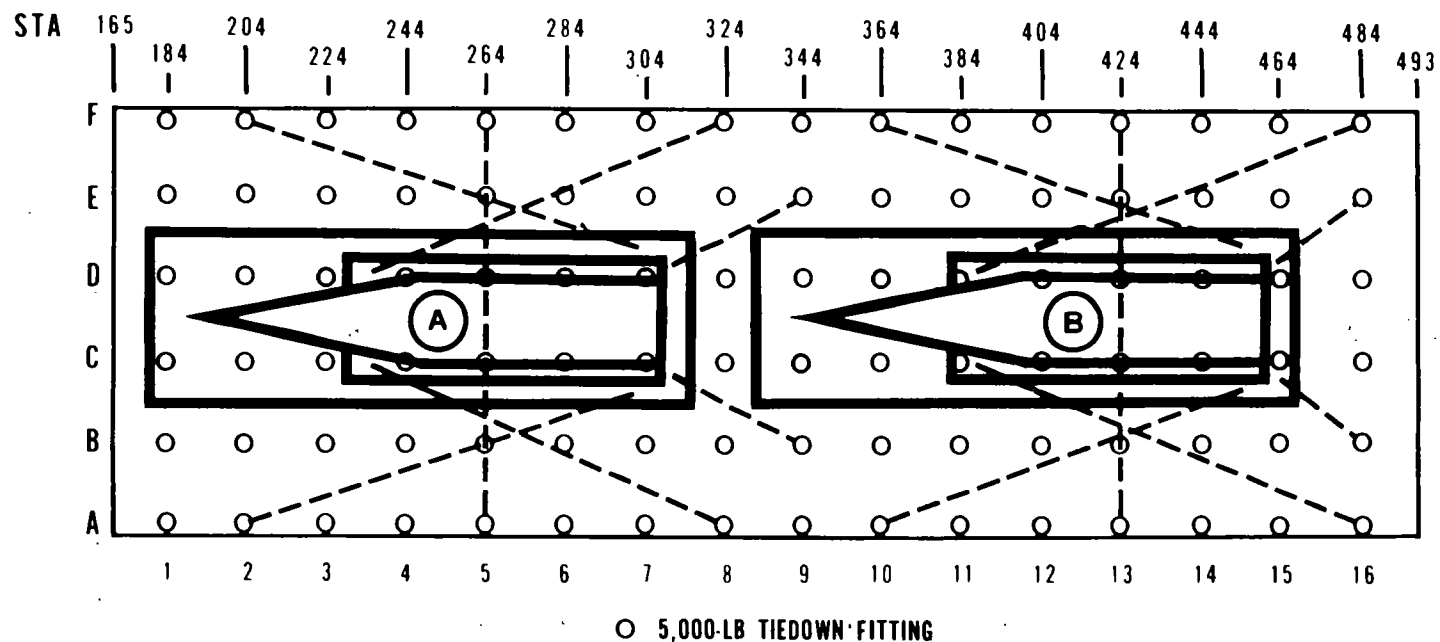
Tiedown fitting		Tiedown device*		Attach to item
design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A6	5	CGU-1/B	5	Left-rear frame-lift fixture.
F6	5	CGU-1/B	5	Right-rear frame-lift fixture.
A9/F9	5	CGU-1/B	5	Over dolly frame under warhead.
A12	5	CGU-1/B	5	Left-front frame-lift fixture.
F12	5	CGU-1/B	5	Right-front frame-lift fixture.
B13	5	CGU-1/B	5	Left-rear base lift-fixture.
E13	5	CGU-1/B	5	Right-rear base lift-fixture.

*MC-1 tiedown-device may be used.



DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	260	339	2223

Figure 4-16. Tiedown diagram for one M480 container base, with HONEST JOHN warhead section, in CH-54 helicopter universal military pod.



ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	180	259	2223
(B)	M480 CONTAINER BASE WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF BASE	334	413	2223

Figure 4-17. Tiedown diagram for two M480 container bases, with HONEST JOHN warhead sections, in CH-54 helicopter universal military pod.

Table 4-10.

Tiedown Data for Two M480 Container Bases, With HONEST JOHN Warhead Sections, in CH-54 Helicopter Universal Military Pod

Item	Tiedown fitting		Tiedown device*		Attach to item
	design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A	A2	5	CGU-1/B	5	Left-rear frame-lift fixture.
	F2	5	CGU-1/B	5	Right-rear frame-lift fixture.
	A5/F5	5	CGU-1/B	5	Over dolly frame under warhead.
	A8	5	CGU-1/B	5	Left-front frame-lift fixture.
	F8	5	CGU-1/B	5	Right-front frame-lift fixture.
	B9	5	CGU-1/B	5	Left-rear base-lift fixture.
	E9	5	CGU-1/B	5	Right-rear base-lift fixture.
	A10	5	CGU-1/B	5	Left-rear frame-lift fixture.
	F10	5	CGU-1/B	5	Right-rear frame-lift fixture.
B	A13/F13	5	CGU-1/B	5	Over dolly frame under warhead.
	A16	5	CGU-1/B	5	Left-front frame-lift fixture.
	F16	5	CGU-1/B	5	Right-front frame-lift fixture.
	B16	5	CGU-1/B	5	Left-rear base-lift fixture.
	E16	5	CGU-1/B	5	Right-rear base-lift fixture.

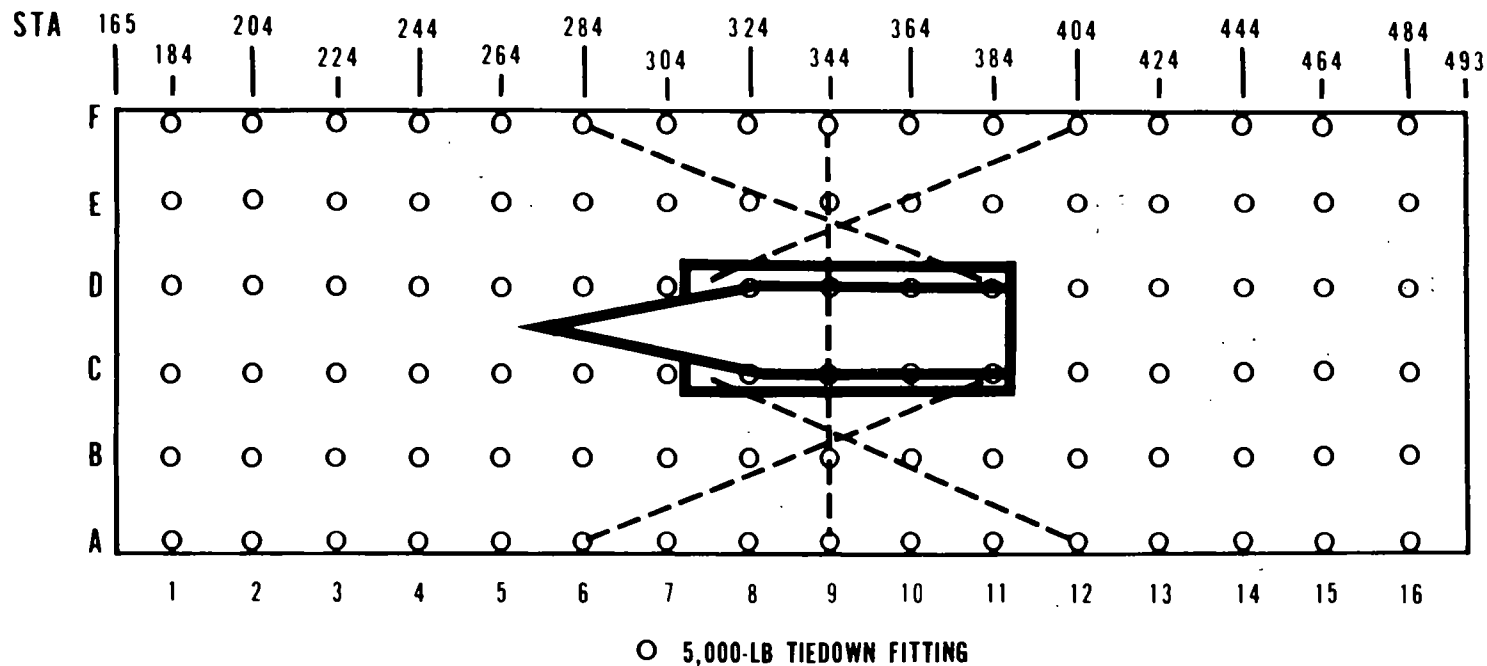
*MC-1 tiedown device may be used.

Table 4-11.

Tiedown Data for One Caster-Mounted Dolly, with HONEST JOHN Warhead Section, in CH-54 Helicopter Universal Military Pod

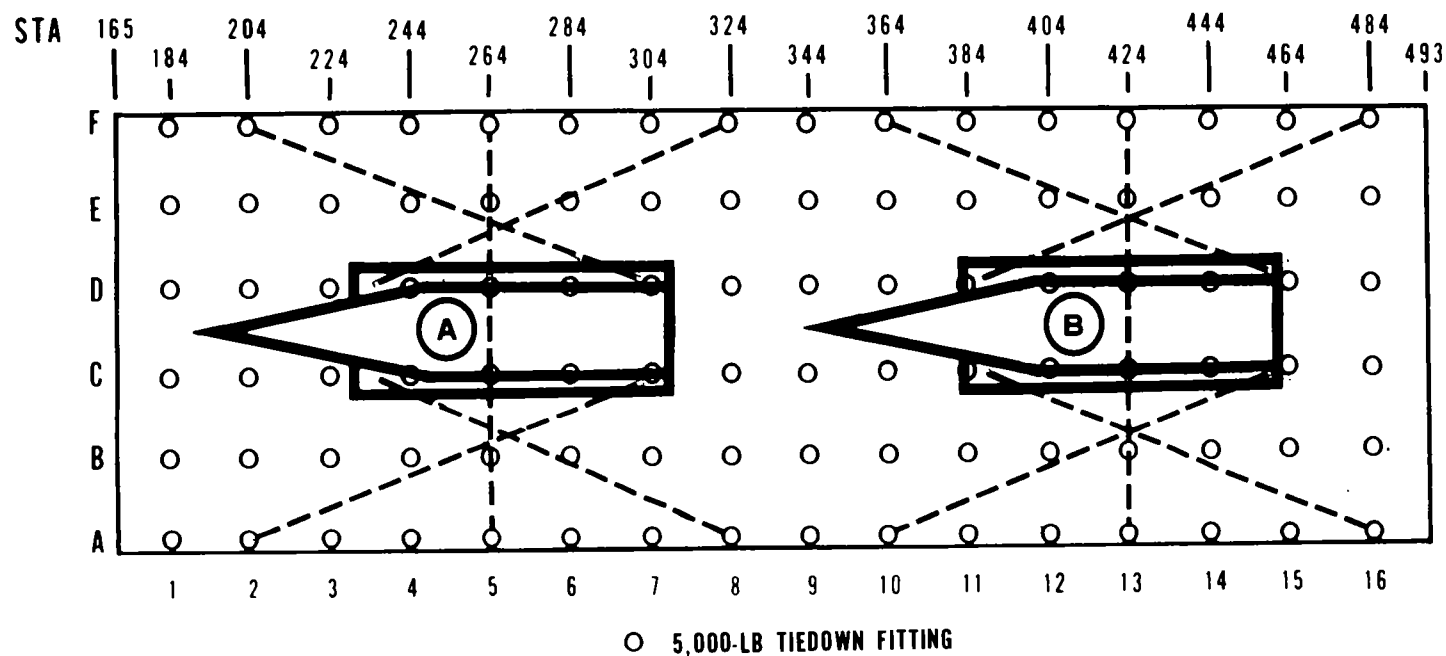
Tiedown fitting		Tiedown device*		
design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	Attach to item
A6	5	CGU-1/B	5	Left-rear frame-lift fixture.
F6	5	CGU-1/B	5	Right-rear frame-lift fixture.
A9/F9	5	CGU-1/B	5	Over dolly frame under warhead.
A12	5	CGU-1/B	5	Left-front frame-lift fixture.
F12	5	CGU-1/B	5	Right-front frame-lift fixture.

*MC-1 tiedown device may be used.



DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
CASTER-MOUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	308	344	1670

Figure 4-18. Tiedown diagram for one caster-mounted dolly, with HONEST JOHN warhead section, in CH-54 helicopter universal military pod.



ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
			REFERENCE POINT	STATION		
(A)	CASTER-MDUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FDRWARD EDGE OF DOLLY	228	264	1670
(B)	CASTER-MDUNTED DOLLY WITH HONEST JOHN WARHEAD SECTION	FORWARD	FORWARD EDGE OF DOLLY	382	418	1670

Figure 4-19. Tiedown diagram for two caster-mounted dollies, with HONEST JOHN warhead sections, in CH-54 helicopter universal military pod.

Table 4-12.

Tiedown Data for Two Caster-Mounted Dollies, With HONEST JOHN Warhead Sections, in CH-54 Helicopter Universal Military Pod

Item	Tiedown fitting		Tiedown device*		Attach to item
	design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	
A	A2	5	CGU-1/B	5	Left-rear frame-lift fixture.
	F2	5	CGU-1/B	5	Right-rear frame-lift fixture.
	A5/F5	5	CGU-1/B	5	Over dolly frame under warhead.
	A8	5	CGU-1/B	5	Left-front frame-lift fixture.
	F8	5	CGU-1/B	5	Right-front frame-lift fixture.
B	A10	5	CGU-1/B	5	Left-rear frame-lift fixture.
	F10	5	CGU-1/B	5	Right-rear frame-lift fixture.
	A13/F13	5	CGU-1/B	5	Over dolly frame under warhead.
	A16	5	CGU-1/B	5	Left-front frame-lift fixture.
	F16	5	CGU-1/B	5	Right-front frame-lift fixture.

*MC-1 tiedown device may be used.



CHAPTER 5

EXTERNAL TRANSPORT BY HELICOPTER (Emergency Procedure)

5-1. General

This chapter prescribes procedures for external transport of the HONEST JOHN warhead section (configurations I, II, and III) by UH-1-series, UH-60A, CH-47, and CH-54 helicopters. Information pertaining to configurations of the warhead section is shown in chapter 3.

WARNING

The contents of chapter 5 are for information and training purposes only and are not to be construed as authority for external transport by helicopter of the HONEST JOHN warhead section. Only dummy loads may be used for practice and/or training exercises. *Nuclear weapons will not be moved by external helicopter transport except in emergency conditions (such as emergency evacuation ordered to maintain US custody or to prevent loss because of fire or flood) and only when the situation does not allow time to prepare and move the nuclear weapons by internal transport (chap 4).*

WARNING

Always assume that a charge of static electricity is present on the helicopter. It is necessary to use some type of discharge apparatus (static probe) (see fig 2-3, FM 55-413) to ground the hook and discharge electricity to prevent shock when the hook is touched. After discharge of electricity, the hook is grasped quickly and firmly and held, if possible, until the hookup is completed. If contact with the hook is lost after initial grounding, the hook must be grounded again before it is touched. Do not use the load as a ground contact. After air delivery and before handling, ground the load again to discharge any accumulated/retained static electricity.

CAUTION

When performing external air transport by Ch-54 helicopter, use a metal apex fit-

ting or a large metal clevis to attach the load to the cargo hook, because a nylon sling ring will tend to adhere to the cargo hook beam and prevent release of the load.

CAUTION

UH-1-series helicopters equipped with a non-rotating cargo suspension unit, which maintains the hook in a fixed position (facing forward) should be used only with a cargo sling having a swivel attachment ring (para 4-37, TM 55-1520-210-10).

NOTE

The following transport procedures for the HONEST JOHN warhead section in the M480 shipping and storage container apply also to the warhead section in the XM480E1 container. Tiedown and lifting fixtures on the M480 container are bars; however, in most cases, the fixtures on the XM480E1 are rings.

5-2. Materials and Procedures for Transport of M480 Container (Configuration I) Using Nylon and Chain, Four-Leg Sling

a. Materials

(1) One 23-foot, nylon and chain, four-leg sling (NSN 1670-00-902-3080) (has rated capacity of 15,000 pounds).

(2) Two CGU-1/B tiedowns (NSN 1670-00-725-1437) (each has rated capacity of 5,000 pounds).

(3) Tape, adhesive, 2-inch-wide (NSN 7510-00-266-5016), or equivalent.

(4) One large clevis assembly, air-delivery, type I (NSN 1670-00-090-5354), for use with CH-54 helicopter.

b. Preparation and Rigging.

NOTE

Each leg of the nylon and chain four-leg sling is constructed of a 15-foot nylon web sling with a metal grab link on its lower end. The grab link is about 10 inches long and is equipped with a spring-loaded

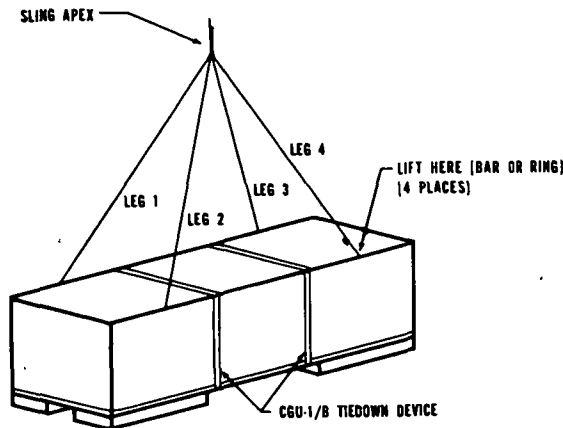


Figure 5-1. Rigging diagram for M480 container, with HONEST JOHN warhead section.

keeper. Attached to the lower or small end of the grab link is a hammer lock, which connects the chain leg to the grab link. The chain leg is about 6 feet long and has 64 links. The link at the free end is referred to as link number 1.

(1) Insure that all bolts and latches of the container are tight and that skids and lift bars are serviceable. Four persons can rig the container for external transport in about 10 minutes.

(2) Secure container top to container base, using two CGU-1/B tiedowns as shown in figure 5-1. Roll and tape excess strap.

(3) Pass one sling chain leg through each container lift fixture (bar or ring) marked "lift here" (fig 5-1).

(4) Form a hitch around each lift bar by passing the chain through the upper part of the grab link that attaches the chain to the nylon sling. Adjust chain length by forcing the selected link past the spring keeper into the lower part of the grab link to complete hitch. Do not use link number one to complete hitch.

(5) Cluster and tape sling legs (breakaway technique) to prevent fouling during lift-off.

(6) Attach 12-inch ring of the sling (sling apex) to the helicopter cargo hook. Center helicopter over load before placing tension on the sling.

c. Derigging. Four persons can derig the container in about 5 minutes.

5-3. Materials and Procedures for Transport of M480 Container (Configuration I) Using Sling, Helicopter, Cargo Carrying External, Four-Leg

a. Materials.

(1) One sling, helicopter, cargo carrying external, four-leg, either NSN 1670-01-027-2902

(has rated capacity of 10,000 pounds) or NSN 1670-01-027-2900 (has rated capacity of 25,000 pounds).

(2) Two CGU-1/B tiedowns (NSN 1670-00-725-1437) (each has rated capacity of 5,000 pounds).

(3) Tape, adhesive, 2-inch wide (NSN 7510-00-266-5016), or equivalent.

(4) One 3-foot, three-loop, air-delivery cargo sling ring (NSN 1670-00-753-3788) (has rated capacity of 10,000 pounds), with link assembly, type IV (NSN 1670-00-783-5988), or equivalent cargo sling ring, for use with UH-1-series helicopters.

b. Preparation and Rigging.

NOTE

Each leg of the sling, helicopter, cargo carrying external, four-leg, either 10,000- or 25,000-pound-capacity, is constructed of a 12-foot, antiabrasive, nylon, braided rope and an 8-foot chain. The rope and chain are connected by a grab hook equipped with a spring-loaded keeper. The chain leg of the 10,000-pound-capacity sling consists of about 111 links. The chain leg of the 25,000-pound-capacity sling consists of about 88 links. On each sling, the link at the free end of the chain is referred to as link number 1.

(1) Follow procedures in 5-2b(1) through 5-2b(5).

(2) Attach metal clevis of the sling (sling apex) to the helicopter cargo hook (CH-47 and CH-54 helicopters). For transport by UH-1-series helicopters, attach the 3-foot sling (ring) to the metal clevis of the sling to form apex for attachment to the helicopter cargo hook. Center helicopter over load before placing tension on the sling.

c. Derigging. Four persons can derig the container in about 5 minutes.

5-4. Materials and Procedures for Transport of M480 Container Base (Configuration II), Using Nylon and Chain, Four-Leg Sling

a. Materials.

(1) One 23-foot, nylon and chain, four-leg sling (NSN 1670-00-902-3080) (has rated capacity of 15,000 pounds).

(2) Tape, adhesive, 2-inch wide (NSN 7510-00-266-5016), or equivalent.

(3) One large clevis assembly, air-delivery, type I (NSN 1670-00-090-5354), for use with CH-54 helicopter.

b. Preparation and Rigging.

(1) Insure that warhead section tiedown strap is secured and that warhead nose cone cover is installed. Four persons can rig the container base for external transport in about 10 minutes.

(2) Check lift fixtures for serviceability. Figure 5-2 shows the lift fixtures used for external transport.

(3) Pass one sling chain leg through each container base lift fixture as shown in figure 5-2.

(4) Form a hitch around each lift fixture by passing the chain through the upper part of the grab link that attaches the chain to the nylon sling. Adjust chain length by forcing the selected link past the spring keeper into the lower part of the grab link to complete hitch. Do not use link number one to complete hitch.

(5) Cluster and tape sling legs (breakaway technique) to prevent fouling during lift-off.

(6) Attach 12-inch ring of the sling (sling apex) to the helicopter cargo hook. Center helicopter over load before placing tension on the sling.

c. Derigging. Four persons can derig the container base in about 5 minutes.

5-5. Materials and Procedures for Transport of M480 Container Base (Configuration II) Using Sling, Helicopter, Cargo Carrying External, Four-Leg

a. Materials.

(1) One sling, helicopter, cargo carrying external, four-leg, either NSN 1670-01-027-2902

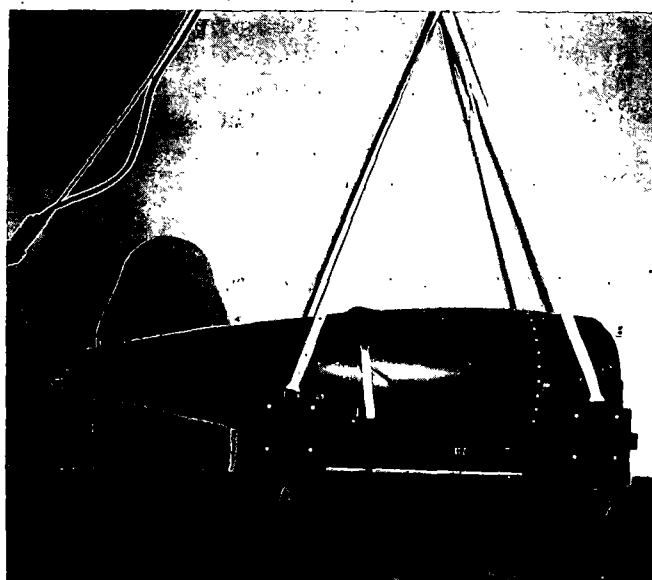


Figure 5-2. M480 container base, with HONEST JOHN warhead section. Sling legs shown are part of the obsolescent universal cargo sling set.

(has rated capacity of 10,000 pounds), or NSN 1670-01-027-2900 (has rated capacity of 25,000 pounds).

(2) Tape, adhesive, 2-inch wide (NSN 7510-00-266-5016), or equivalent.

(3) One 3-foot, three-loop, air-delivery cargo sling ring (NSN 1670-00-753-3788) (has rated capacity of 10,000 pounds), with link assembly, type IV (NSN 1670-00-783-5988), or equivalent cargo sling ring, for use with UH-1-series helicopters.

b. Preparation and rigging.

(1) Follow procedures in 5-4b(1) through 5-4b(5).

(2) Attach metal clevis of the sling (sling apex) to the helicopter cargo hook (CH-47 and CH-54 helicopters). For transport by UH-1-series helicopters, attach the 3-foot sling (ring) to the metal clevis of the sling to form apex for attachment to the helicopter cargo hook. Center helicopter over load before placing tension on the sling.

c. Derigging. Four persons can derig the container in about 5 minutes.

5-6. Materials and Procedures for Transport of Caster-Mounted Dolly (Configuration III), Using Nylon and Chain, Four-Leg Sling

a. Materials

(1) One 23-foot, nylon and chain, four-leg sling (NSN 1670-00-902-3080) (has rated capacity of 15,000 pounds).

(2) Tape, adhesive, 2-inch wide (NSN 7510-00-266-5016), or equivalent.

(3) One large clevis assembly, air-delivery, type I (NSN 1670-00-090-5354), for use with CH-54 helicopter.

b. Preparation and rigging.

(1) Insure that warhead section tiedown strap is secured and that warhead nose cone cover is installed. Four persons can rig the caster-mounted dolly for external transport in about 10 minutes.

(2) Check lift fixtures for serviceability. Figure 5-3 shows the lift fixtures used for external transport.

(3) Pass one sling chain-leg through each caster-mounted dolly-lift fixture, as shown in figure 5-3.

(4) Form a hitch around each lift fixture by passing the chain through the upper part of the grab link that attaches the chain to the nylon sling. Adjust chain length by forcing the selected link past the spring keeper into the lower part of the grab link to complete hitch. Do not use link number one to complete hitch.

(5) Cluster and tape sling legs (breakaway technique) to prevent fouling during lift-off.

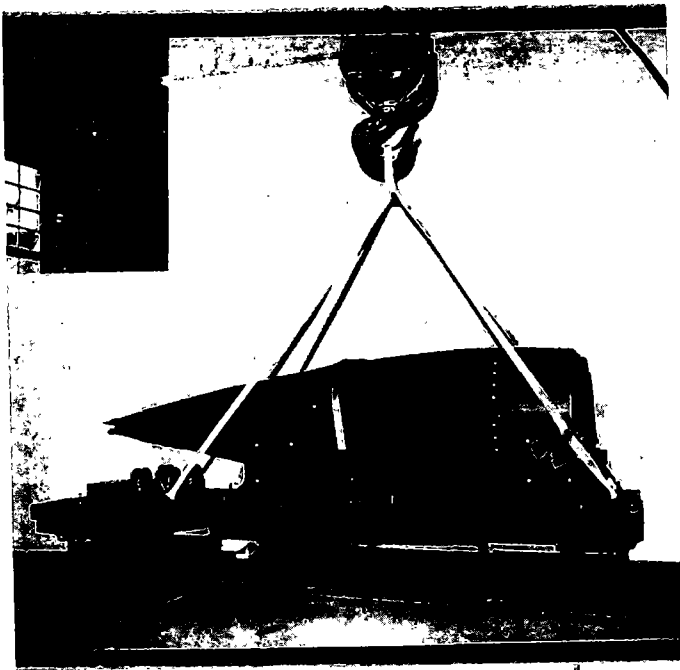


Figure 5-3. Caster-mounted dolly with *HONEST JOHN* warhead section. Sling legs shown are part of the obsolescent universal cargo sling set.

(6) Set the dolly wheels so they may rotate freely.

(7) Attach 12-inch ring of the sling (sling apex) to the helicopter cargo hook. Center helicopter over load before placing tension on the sling.

c. Derigging. Four persons can derig the caster-mounted dolly in about 5 minutes.

5-7. Materials and Procedures for Transport of Caster-Mounted Dolly (Configuration III) Using Sling Helicopter, Cargo Carrying External, Four-Leg

a. Materials. Items shown in 5-5a.

b. Preparation and rigging.

(1) Follow procedures in 5-6b(1) through 5-6b(6).

(2) Attach metal clevis of the sling (sling apex) to the helicopter cargo hook (CH-47 and CH-54 helicopters). For transport by UH-1-series helicopters, attach the 3-foot sling (ring) to the metal clevis of the sling to form apex for attachment to the helicopter cargo hook. Center helicopter over load before placing tension on the sling.

c. Derigging. Four persons can derig the caster-mounted dolly in about 5 minutes.

CHAPTER 6

EMERGENCY MOVEMENT BY HELICOPTER

6-1. General

a. This chapter provides for emergency logistic movement (para 2-11, TM 39-45-51C) of the HONEST JOHN warhead section (para 3-1b), for military contingency or for logistic supply during periods of tension. It also provides for emergency evacuation under political or military conditions of such nature that noncompliance with portions of the nuclear and flight safety regulations is the only alternative to destruction of weapons.

b. Exercise of emergency movement authority is restricted to situations wherein the security of nuclear assets is endangered or emergency logistic movement is dictated by a pending regional or world crisis. The determination that emergency movement is justifiable will be approved by the theater commander.

c. Minimum spacing of and numerical limits for nuclear weapons and class II nuclear components are necessary to prevent the possibility of nuclear material interaction and to minimize sympathetic detonation of high explosive components in the event of an accident. The minimum spacing requirements between nuclear weapons and/or class II nuclear components, provided in section 4, TM 39-45-51A, must be scrupulously observed to prevent the possibility of nuclear material interaction.

d. If emergency logistic movement is directed, there may be an operational necessity to airlift dangerous items that should not be mixed, as indicated in table 2-1, TM 39-45-51C. Should this occur, the commander who ordered the emergency movement may waive the requirements of table 2-1.

6-2. Emergency Movement of the HONEST JOHN Warhead Section as a Helicopter Internal Load

Use the same materials and loading procedures prescribed by Chapter 4.

NOTE

Table and tiedown diagrams have not been developed for mixed internal loads of nuclear weapons or class II nuclear components. This, however, does not prohibit the shipment of mixed loads if the limitations specified in TM 39-45-51A and TM 39-20-7 and adhered to.

6-3. Emergency Movement of the HONEST JOHN Warhead Section as a Helicopter External Load

Use the same materials and preparation and rigging prescribed by Chapter 5.

NOTE

External loads have not been developed for maximum loads of individual or mixed nuclear weapons or class II nuclear components. This, however, does not prohibit such external loads if the limitations specified in TM 39-45-51A and TM 39-20-7 are adhered to and if the loads are justifiable and directed. Also applicable are the limitations for external transport by helicopter (chap 5).



APPENDIX

REFERENCES

1. Publication Indexes

Department of the Army pamphlets of the 310-series should be consulted frequently for the latest changes or revisions of references given in this appendix and for new publications relating to material covered in this manual.

2. Army Regulations (AR)

- 10-16 US Army Nuclear Agency
- 40-14 Control and Recording Procedures: Occupational Exposure to Ionizing Radiation
- 50-5 Nuclear and Chemical Weapons and Materiel: Nuclear Surety (C) 50-5-1 Nuclear and Chemical Weapons and Materiel: Nuclear Surety (U)
- (C) 50-104 Safety Rules for the Operation of the HONEST JOHN Nuclear Weapon System (U)
- 55-203 Movement of Nuclear Weapons, Nuclear Components, and Related Classified Nonnuclear Materiel
- 95-1 Army Aviation: General Provisions and Flight Regulations
- 95-27 Operational Procedures for Aircraft Carrying Dangerous Materials
- 700-65 Nuclear Weapons and Nuclear Weapons Materiel

3. Field Manuals (FM)

- 1-100 Army Aviation Utilization
- 55-450-19 Army Helicopter External Load Operations
- 100-50 Nuclear Unit Operations in Combat
- 101-20 US Army Aviation Planning Manual

4. Technical Bulletins (TB)

- (SRD) 9-1100-811-40 Security Classification of Nuclear Weapons Information (U)
- 385-2 Nuclear Weapons Firefighting Procedures

5. Technical Manuals (TM)

- 9-1100-200-10 Operator's Manual: HONEST JOHN Atomic Warhead Sections
- 9-1100-200-20 Organizational Maintenance: M27, M47, and M48 Atomic Warhead Sections; M72E1 Training Atomic Warhead Section
- 9-1300-206 Ammunition and Explosives Standards
- 38-250 Packaging and Materials Handling: Preparation of Hazardous Materials for Military Air Shipment
- 39-0-1A Numerical Index to Joint Nuclear Weapons Publications (Including Related Publications) (Army Supplement)
- (SRD) 39-20-7 Nuclear Safety Criteria (U)
- (CRD) 39-20-11 General Firefighting Guidance for Nuclear Weapons (U)
- 39-45-51 Transportation of Nuclear Weapons Materiel
- (SRD) 39-45-51A Transportation of Nuclear Weapons Materiel (Supplement): Shipping and Identification Data for Stockpile Major Assemblies (U)

- 39-45-51C Transportation of Nuclear Weapons Materiel (Supplement): Military Criteria for Shipment
- (CRD) 39-50-8 Emergency Destruction of Nuclear Weapons (U)
- 55-450-8 Air Transport of Supplies and Equipment: External Transport Procedures
- 55-450-11 Air Transport of Supplies and Equipment: Helicopter External Loads Rigged with Air-Delivery Equipment
- 55-450-12 Air Transport of Supplies and Equipment: Helicopter External Loads for Sling, Nylon and Chain, Multiple Leg
- 55-450-15 Air Movement of Troops and Equipment (Nontactical)
- 55-450-18 Air Transport of Supplies and Equipment: Internal and External Loads, CH-47 Helicopter
- 55-450-19 Air Transport of Supplies and Equipment: Helicopter External Lift Rigging Materiel, Techniques and Procedures
- 55-1520-209-10 Operator's Manual: Army Model, CH-47A Helicopter
- 55-1520-210-10 Operator's Manual: Army Model, UH-1D/H Helicopter
- 55-1520-217-10-1 Operator's Manual: Army Model, CH-54A Helicopters
- 55-1520-217-10-2 Operator's Manual: Army Model, CH-54B Helicopters
- 55-1520-219-10 Operator's Manual: Army Model, UH-1B Helicopter
- 55-1520-220-10 Operator's Manual: Army Model, UH-1C/M Helicopter
- 55-1520-227-10 Operator's Manual: Army Model, CH-47B and CH-47C Helicopters
- 55-1520-237-10 Operator's Manual: UH-60A Helicopter

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